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NO. 11

THE CLASSICAL QUARTERLY

APRIL, 1933.

NOTES ON THE *THEBAIS* OF STATIVS.

(Continued from p. 16.)

VII 683-687

occidis audax,
occidis Aonii puer altera cura Lyaei.
marcida te fractis planxerunt Ismara thyrsis, 685
te Tmolos, te Nysa ferax Theseaque Naxos
et Thebana metu iuratus in orgia Ganges.

'altera cura' in 684 is supposed by some to mean a second cause of grief, the first being the death of the two sacred tigers which after serving in the Indian campaign were killed by Aconteus in 564-98. Others translate it 'one favourite more' and say that the first favourite was the Phegeus mentioned in 603, who however is merely described as 'Baccheus cultor'. The episode of Eunaëus, 649-87, is so elaborately polished, his youth and effeminacy are so fondly depicted, and his death evokes such lamentation from the whole Bacchic world, that neither of these explanations can be entertained, and a third spontaneously presents itself. The reader of Statius must be on the look-out for mythological allusions, which are not always obvious. The words 'ausum contraria Phoëbo | carmina nec fida gausam Pallada buxo' in *silv.* V 3 88 were a puzzle for centuries and only elucidated in 1892.¹ If we met anywhere such a phrase as 'puer altera cura Alcidae' we should soon hit on the interpretation 'altera post Hylan': here we are to remember a less famous personage and understand 'altera post Ampelum'.

And now I find lurking unnoticed in Jortin's *Misc. Obs.* II p. 365 'Altera cura post Ampelum, de quo uide Ouid. *fast.* II 409'. The reference however should be 'III 409', though the error occurs also in the indexes to Riese's and Guethling's editions.

VIII 65-68

sed quid ego haec? i, Tartareas ulciscere sedes,
Tisiphone; si quando, nouis asperrima monstis,
triste, insuetum, ingens, quod nondum uiderit aether,
ede nefas, quod mirer ego inuideantque sorores.

This of course is how verse 66 ought to be punctuated. Editors make no

¹ On the other hand *Theb.* II 664-6 nebridas et fragiles thyrsos portare putastis | inbellem ad sonitum maribusque incognita ueris | foeda Celaenaea committere proelia buxo?, intelligible to everyone else, receives on p. 501 of Mr Klotz's

index the extraordinary interpretation 'proelia (*Apollinis et Marsyae*): as if those 'proelia' were 'foeda' and 'maribus incognita ueris', and as if the Thebans had anything to do with them.

mistake at *Ach.* I 508 f. 'heia, inrumpe deos et fata latentia uexa, | laurigeros-que ignes, si quando, audissimus hauri', but here they join 'si quando asperrima' and say 'supple fuisti'. The *nunc* which Statius omits is expressed by Ovid *art.* II 15 'nunc mihi, si quando, puer et Cytherea, fauete' and *amor.* I 13 6 'si quando, lateri nunc bene iuncta meo est'.

VIII 255-258

qualis post longae Phineus ieiunia poenae,
nil stridere domi uolucresque ut sensit abactas
(necdum tota fides), hilaris mensasque torosque
nec turbata feris tractauit pocula pinnis.

256 *uolucresque ut D, uolucres ut P, uolucres(que) et ω*. D is one of the better MSS; but if it were quite the worst, or if its reading were in none of them, it ought to be in every edition; and if Gronovius had read the epics as attentively as the *siluae* it would be at least in one. It is in none,¹ P's is in all, and Barthius interprets, as he must, '*nil stridere*, id est minime, prorsus non'. Phineus then is said to perceive that the Harpies, having been chased from the house, are making no noise there! *nil* is not object but subject,² and the participle is co-ordinate with the infinitive as in 'magno misceri murmure pontum | emissamque hiemem sensit Neptunus'.

VIII 570-578

ac primum in facilis grassatus cuspidē turmas
arma refert sociis et in agmina fida peracta
caede redit.
mox ignotum armis ac solo corpore mensus
Tydea non timuit.

572

577

570. Kohlmann's text is *primum in faciles* and his note '*primam facili* P pr.m., *primam in faciles* P m. sec., *primum faciles* BS', which implies that other MSS, such as those which he denotes by the letter M, have *primum in faciles*, like his text. The notes of the later editors are unskilfully framed and do not clearly inform us whether the MSS in general present *in* or omit it. As to P, Wilkins's report agrees with Kohlmann's, but Mr Klotz's note contradicts it, assigning the corrections to the first hand.

The *primam* of P points to *prima in*. *prima cuspidē* is a pictorial equivalent for *primum*, resembling VI 469 f. '*pulvere quarto | campum ineunt*', Verg. *Aen.* VII 148 *prima* (MP, *primo* R) *lampade*, Mart. X 93 5 *pollice primo*. Where poets use the adjective, scribes will sometimes substitute the adverb, as in *Theb.* IV 95 'ut *primae* (P, *primum ω*) *strepere tubae*', VII 670 f. 'qualis ubi *primam* (*primum* cod. unus) *leo mane cubilibus atris | erexit rabiem*',

¹ It stands in Bernartius' margin as a variant or emendation.

² If I compare Hor. *serm.* II 8 78 'stridere . . .

susurros' it is only because C. F. W. Mueller *Synt. d. nom. u. akk. p.* 11 makes the same blunder of taking the accusative for object.

III 552 *primus* (*primum* cod. unus), V 346 *primi* (P, *primum* ω), Verg. *buc.* VIII 24, *Aen.* IV 28, V 491, VI 819, IX 494, X 516, XI 238, XII 103 f. 'mugitus ueluti cum *prima* (P, *primam* M, *primum* R) in proelia taurus | terrificos ciet'.

IX 248-251

talis agit sparsos mediisque in fluctibus heros
frena manu pariter, pariter regit arma, pedumque
remigio sustentat equum, consuetaque campo
fluctuat et mersas leuis ungula quaerit harenas.

Hippomedon keeps afloat a large quadruped which can swim for itself by rowing with his feet. This impossible performance is mildly described by Jortin as 'very odd', and in *Misc. Obs.* I p. 186 he proposed 'pedum *se* | remigio sustentat equus': 'contra sensum non minus quam contra metricam Stati' says Mr Klotz, whose knowledge of Statius' metric is not what it should be.¹ Jortin cited the verse-endings I 625 *canum uim*, VI 140 *agi rem*, and XI 490 *cadit Sphinx*, and might have added IV 87 '*riget Sphinx*', while *se* is the last word of VI 653. I suggested as a slighter change 'pedum *quem*': a monosyllabic relative pronoun stands at the end of three verses of the *Thebais*.

But yet it must be recognised, as Madvig said, 'permulta sibi Statium permisisse quae apud alios incredibilia uiderentur', and there are indications that this is a case in point. *manu* and *pedum* might be expected to correspond, and the line 'fluctuat et mersas leuis ungula quaerit harenas' does not so well describe a swimming horse as a helpless poetical beast lifted off its legs by an almighty poetical rider whose horizontal motions counteract gravitation.

IX 462 f.

non secus aequoreo iactat Teumesius amnis
Hippomedonta salo.

amnis ω and all editors before 1908, *ignis* P and Mr Klotz, 'quod explicat Vollmer [*mus. Rhen.*] 1896 p. 31, cf. 10, 685'. When Vollmer 'explicat' one is quite prepared to read as follows: 'Absichtlich spielt Statius mit den Worten, wenn er den Fluss umschreibt mit *Teumesius ignis* (*amnis* platt in BM); *ignis* steht für ardor, ira. Dasselbe Spiel mit dem Gegensatze findet sich *silu.* I 2 204 *amnis in externos longe flammatus amores*, *Theb.* VIII 17 *ustaeque paludes, silu.* IV 4 83 *tosto mari*'.

If *amnis* is 'platt', *παραμός* is 'platt' wherever it occurs in the combat of Achilles and Scamander. But this term, in the lingo of German conservative critics (the English use 'weak' or 'tame'), means simply 'nicht absurd', and all good literature is in their private opinion 'platt'.

Now for *ignis*. *ardor* and *ira* are used in periphrasis, as at *Il. Lat.* 174 f. 'bis tricenis *Menelai* nauibus *ardor* | insequitur totidemque ferox *Agapenoris*

¹ The *ergo hoc* at the end of XI 429, adopted *cam Stati* if it were a conjecture. by Mr Klotz from PN, would be 'contra metri-

ira', and therefore *Ismenius ardor* is no more open to exception than βῖν 'Ἡρακλῆειν. *Ismenius ignis*, being metaphorical, would be a long step further; and moreover its most natural meaning would not be *Ismenos iratus* but a person with whom Ismenos was ardently in love, on the analogy of 'meus ignis Amyntas'. But what we have is *Teumesius* (i.e. *Boeotius*) *ignis*: are we seriously asked to interpret that as *amnis Boeotius iratus*? And this brings us round to the enquiry, where is the 'Gegensatz'? It may exist in the '*amnis . . . flammatus*' cited from the *siluae*, but here no *amnis* has been left in the text, and Vollmer is trying to eat his cake and have it. As for Mr Klotz's reference to X 685, the best way to deal with that is to transcribe the sentence: 'uulgu euntem | auctorem pacis seruatoreque deumque | conclamat gaudens atque ignibus implet honestis.' If unthinking critics could know how much ashamed one is to answer what they write, they would begin to be a little ashamed of writing it.

The compilation known as *liber glossarum* or *glossarium Ansileubi* contains the gloss (Lindsay *gloss. Lat.* I p. 561 no. 699) *Teumesius: amnis est*. It appears to be a false interpretation of this line of Statius, and one of the MSS presenting it is nearly a hundred years older than P.

IX 788 f.

iamdudum hunc contra stimulis grauioribus ardet
trux Atalantiades; necdum ille quierat, et inquit.

The *quierat et* of P was substituted for the *quieuerat* of ω by Kohlmann, but he did not alter the punctuation accordingly: he made '*necdum ille quierat*' a parenthesis as '*necdum ille quieuerat*' had been, and his successors have followed him. The construction is that of XII 609 f. '*necdum Atticus ire parabat | miles, et infelix expauit classica Dirce*' and III 42-4 '*necdum ora patent, dubiusque notari | signa dabat magnae longe manifesta ruinae | planctuque et gemitu.*'

X 47 f.

quod superest, duris adfrangunt postibus ungues
pectoraque, et siccos minuunt in limine dentes.

I should have thought that this punctuation must be in some editions if not in all; but the only place where I have found it is Walker's *corpus poetarum*. Everywhere else the comma stands after *ungues*; and although the older editors, who revelled in commas, have another after *pectoraque*, those of them who translate join *pectora minuunt*, except only Nisard. Queck has no comma, which is correct but pusillanimous.

Walker's again seems to be the only text which punctuates XI 306-8 as the connexion of thought requires.

arma prius, famuli! coeant in proelia fratres;
 uult gemitus lenire Creon. lucrare furorem:
 uictori mihi cuncta lues.

Modern editors make two mistakes; some of their predecessors avoided one or other of them.

X 873-877

humilesne Amphionis arces,
 pro pudor, hi faciles carmenque inbelle secuti,
 hi mentita diu Thebarum fabula muri?
 et quidnam egregium prosternere moenia molli
 structa lyra?

873 *humilesne* Pw, *haecne illae* N²r², 'manifesta interpolatione' says Mr Klotz, 'quam amplexi sunt Barthius et Garrodus'. Et Bentleius; because they, unlike Mr Klotz and most editors, were not perfectly satisfied with the sentence 'hine faciles muri sunt humiles Amphionis arces?'¹ Marolles was ashamed to translate *humiles*, and simply left it out; Nisard preferred to substitute 'horrible'. The true correction was found by Peyraredus, 'Amphionis artes': the corruption was partly caused by the *Amphionis arces* of IV 357, 611, VII 456. As no one has ever accepted this amendment, and as the last three editors do not even mention it, I conclude that it is not understood. The construction is 'hine muri qui faciles secuti sunt Amphionis humiles artes carmenque inbelle?' A third synonym follows, 'molli . . . lyra'.

X 897 f.

non tamen haec turbant pacem Iouis: ecce quierant
 iurgia, cum mediis Capaneus auditus in astris.

897 *quierant* P cum paucis, *queruntur* plerique: 'quierunt Klotzius' says that editor. No: his own note informs us that this is a correction in Q, and in fact it is also in the text of Gronovius and the Delphin edition. The sum total of original conjectures which Mr Klotz has introduced into the text appears to be seventeen, half-a-dozen of which are merely orthographical; but he contrives to see his name in print at seventeen other places by attaching it to readings which are no conjectures of his. For instance at I 22 he says 'teque o' Klotzius', but immediately divulges that this is the reading of P; and Mueller had told us that it was also the conjecture of Gronovius. Apparently he thus lays claim to honour for printing any MS lection which has not been printed by another editor. Suppose that all of us wooed fame so strenuously! When Mueller and Kohlmann similarly introduced, as they often did from P, a novel reading, they did not add 'Muellerus' or 'Kohlmannus'; and Mr Klotz does not extricate them from the dank shade of modesty by supplying *their* names.

¹ They ought also to have been disturbed by the co-ordination *faciles carmenque secuti*.

A considerable proportion of Mr Klotz's conjectures are useless changes or changes for the worse; and this '*quierunt*, cum Capaneus auditus' is one. *Lat. Gramm.* Stolz-Schmalz ed. 5 (Hoffmann) p. 750 'Im Hauptsatz steht meist ein duratives Tempus (Impf. oder Plqpf.), ganz selten das hist. Perf. seit Cic. *Phil.* II 73 al.' In Statius I have noticed only two examples of the preterite (*Theb.* V 89 and X 329) against twenty of the imperfect or pluperfect. I do not overlook the consideration that *quierunt* is nearer by one letter to *queruntur*; but on the other hand preterites (except of course when ending in *-erunt*) are less often changed to pluperfects than pluperfects to preterites.

VII 567 'Liber in Aonios meritas dimiserat agros': meritas tigres, a pair which had drawn his car through his Indian campaign and to which on his return he had given their discharge and turned them loose to roam about the country. *dimiserat* ω, and that is the best possible word. No variant is commoner than *dimittere demittere*, and twenty examples are to be seen in Mr Klotz's apparatus, among them these: X 144 '*dimittunt* (ex *de-* M¹) ML', IX 499 '*di-* ex *demissa* Q', VI 696 '*dimisit* N . . ., *dqm-* B¹b¹.' But when P in consequence here presents *diemiserat*, with the hypermetrical *di* underlined, Mr Klotz accepts the conjecture and attributes it to himself, '*emiserat* Klotzianus'.

XII 408 'tempus erit lacrimis, accenso flebitis igne' Pω, and 'accenso flebitis igne' Seru. *Aen.* XII 156: '*igni* Klotzianus'. Metre shows that Statius used both forms of the ablative, but *igne* often and *igni* seldom. At the end of the verse his MSS give *igni Theb.* V 194, XII 275, *silu.* II 1 216, V 3 204, *igne Theb.* VII 191, XI 483, XII 408. Mr Klotz, changing *igne* here, leaves it unchanged at VII 191 and XI 483.

XI 273-275

urbem armis opibusque grauem et modo ciuibus artam,
ceu caelo deiecta lues inimicaue tellus,
hausisti uacuumque tamen sublimis obumbras.

That *tellus* neither deserves the obelus usually affixed to it nor demands any of the emendations proposed, and that 'caelo deiecta lues' supports the scholiast, who interpreted *inimica tellus* of famine, rather than Barthius, who preferred earthquake, would seem to me clear enough even without the parallel of Luc. V 109-11 '*sustulit iras | telluris sterilis monstrato fine, resoluit | aera tabificum*'.

XI 329-337

quis furor? unde iterum regni integrata resurgit
Eumenis? ipsi etiam post omnia, comminus ipsi
stabitis? usque adeo geminas duxisse cohortes
et facinus mandasse parum est? quo deinde redibit
uictor? in hosne sinus? o diri coniugis olim
felices tenebrae! datis, improba lumina, poenas.

330

haec spectanda dies? quo, saeue, minantia flectis
 ora? quid alternus uoltus pallorque ruborque
 mutat et obnixa frangunt mala murmura dentes?

335

The punctuation of 334 f. should of course be this:

datis, improba lumina, poenas:

haec spectanda dies.

poenae quas dant Iocastae oculi, quod non, ut Oedipodis, excaecati sunt, eo constant quod sic eis spectandus est dies mutua Eteoclis et Polynicis caede funestus.

Again, 348-352 are to be punctuated thus:

sed pulsat muros germanus et impia contra
 bella ciet. non mater enim, non obstat eunti
 ulla soror. te cuncta rogant, hic plangimus omnes;
 ast ibi uix unus pugnas dissuadet Adrastus,
 aut fortasse iubet.

350

Modern editors disturb the connexion by placing a semicolon after *soror* and a full stop after *omnes*, though Gronovius and his fellows made only the second mistake. And yet again: this is the true punctuation of XII 491 f.

mite nemus circa cultuque insigne uerendo,
 uittatae laurus et supplicis arbor oliuae.

The second line is an apposition to *nemus*, which is *mite* because of its olives and *cultu insigne uerendo* because of its *uittae*. Modern editors destroy sense and grammar by placing the comma after *circa*; their predecessors placed another after *laurus*, which they took to be genitive depending on *cultu*.

XII 661-664

noctem adeo placidasque operi iunxere tenebras,
 certamenque inmane uiris, quo concita tendant
 agmina, quis uisas proclamet ab aggere Thebas,
 cuius in Ogygio stet princeps lancea muro.

How can 'quo concita tendant agmina' be an interrogation co-ordinate with 'quis proclamet' and 'cuius stet lancea'? How can it be an interrogation at all? How could the direction in which the Athenians were to march be a subject of competition? And what is the use of mock-translations like 'the warriors mightily strive how they may speed the army's march' and 'c'est une lutte ardente entre ces guerriers à qui l'emportera de vitesse'?

The reading of P is not *tendant* but *tendunt*: take this, and all is well. *quo* is relative with *certamen* for its antecedent, and ablative depending on *concita*. Emulous endeavour to catch the first glimpse of Thebes and lodge the first missile in its wall was what made their march so rapid. It would be also grammatical, but less natural and effective, to make *quo* the relative adverb and *Thebas* its postponed antecedent.

XII 812

Thebai dactyl.

Here I return to Mr Klotz's note on VI 465 and to these words in it: 'corripitur -a- in titulo Thebaidos propter graecum accentum sequentis syllabae'.

Suppose, for the sake of argument, that the Greek accent on the next syllable, which did exert this force in Latin in the fifth century and even at the end of the fourth (Mueller *d.r.m.* ed. 2 p. 444), had begun to exert it, though in Greek it had not, in the first. Then consider the thoughtlessness or hardihood of putting forward, to account for *Thebāi* in *Theb.* XII 812, an explanation which will not account for *Thebāicae* in *silu.* IV 9 26 and which will account for *Nerēis* in *Ach.* I 24. The accent of *Θηβαϊκός* is not on the next syllable. The accent of *Νηρηΐς* is; but *Νηπεΐς* is as old as Pindar.

If Mr Klotz's explanation of *Thebāis* were valid, it would be an equally valid explanation of *Nerēis*, and also of *Letōides* (beside *Letōis*) in *Theb.* I 663 and 695. But it would be a false explanation of both, as *Νηπεΐς* in Pindar and *Λητοίδης* in Hesiod prove. Why then should it be thought a true explanation of *Thebāis*? merely because there is no *Θηβαΐς* forthcoming to give it the lie?¹

And tell me, where is *Θηβαΐς* forthcoming, or *Thebāis*? for I do not know. On the other hand I know eleven examples of *Thebāis* in the classical age: two in Ovid, one in Seneca, one in Lucan, six in Statius (though Mr Klotz's index omits XII 812), and one in Juvenal. And what is wrong with it? why should anyone, even if *Thebāicus* did not exist, expect the vowel to be long? What parallels are there to an *ἐθνικὸν θηλυκὸν* in *-āis* from the primitive *Θῆβαι*? I know just one, *Κωπαῖδων* from *Κώπαι* in *Ar. Ach.* 880; but that verse is spoken by a Boeotian, and everywhere else in Aristophanes (*pac.* 1005, *Ach.* 962 and even 883 where the Boeotian speaks again), and apparently in the rest of Attic poetry also, the form is *Κωπαῖδ-* or *Κωπαδ-*. The scansion of *'Αθηναΐς* from *'Αθῆναι* seems to be perceptible only in *carm. epigr. Buech.* 1549 (a poem exhibiting no faults of prosody) 12, and there it is *Athenāidis*²: *'Αθηναΐς*, also found in inscriptions, is like *Εὐβοΐς* beside *Εὐβοίς*.

It is further to be remarked that Mr Klotz's Greek accent is highly selective in its action, and does not affect any other of Statius' numerous feminines in *-is*. It does not make him say *Aenēis*³ or *Asōpis* or *Bacchēis* or *Brisēis* or *Cebrēnis* or *Macōtis* or *Nyctēis* or *Persēis* or *Scyrēis* or *Titānis* or

¹ Mr Klotz will no doubt explain the *Phocēis* (from *Φώκαια*) of Lucan and Silius in the same way, and leave their *Phocēicus* to shift for itself. He would be well pleased if he could similarly explain the *Eubōis* (from *Εὐβοία*) of *Ach.* I 414 and *silu.* I 2 263, similarly disregarding the *Eubōicae* of *silu.* I 2 177; but alas, though Sophocles has *Εὐβοίς*, in Aeschylus and Euripides the word is *Εὐβοῖδα* or *Εὐβοῖδα*. For the *Edōnis* of Lucan and

Statius the explanation would have more plausibility, were not the false quantity assignable to the false analogy of *Bistōnis* or *Sithōnis*.

² Whence Georges and Lewis and Short got their '*Panathenāicus*' I do not know, but it was not from Auson. 191 14 (Peip. p. 49) '*Panathenāicis tu numerandus eris*'.

³ Though this is correctly formed from *Alvéas* and used by Ovid *ex Pont.* III 4 84.

Tithōnis or *Tritōnis*; it confines its energy to the six examples of the single word *Thebais*, and in that narrow space it rages like a wild beast in a cage. Not one escapes.

Mr Klotz's frivolity invites banter; but now to be quite serious. For the prosody of the Greek word *Θηβαίς* there could be no better authority than Statius; not Antimachus of Colophon himself. He was born and bred in a Greek city, he was saturated with Greek poetry by the poet and scholar who was his father, he knew how the Greeks pronounced the name of the cyclic poem and the other epics which they had written about Thebes, and you may be sure that he did not pronounce the name of his own epic otherwise. In short, Mr Klotz has brought a quack doctor to the bedside of a *malade imaginaire*.

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GALLUS AND THE FOURTH *GEORGIC*.

ADDENDUM.

THE comments of some learned friends, whose agreement with the main contention of my paper has been very gratifying, indicate that a brief postscript would be helpful. On p. 44 I suggested an explanation by which a very slight basis of fact might be found for the statement of Servius, but I did not conceal my own opinion that the story is an empty invention. I find that some Virgilian scholars would be much relieved if they could imagine a way in which that troublesome tale might have arisen out of nothing. There is one very simple way. All that it assumes is a slip of the pen, *Georgica* for *Bucolica*. I have no doubt that every reader of the *Classical Quarterly* has made similar slips in speech or in writing when mentioning works of Virgil or of other authors, and an inspection of the text and critical apparatus of Nonius or Priscian will show that this fallibility is no new thing. In the present case a hint may easily be found in Ammianus Marcellinus, xvii. 4. 5: *Gallus poeta, quem flens quodam modo in postrema Bucolicorum parte Vergilius carmine leni decantat (= laudat, celebrat)*. The reference is, of course, to the Tenth Eclogue. The words *in postrema Bucolicorum parte* are rather suggestive when compared with the two notes of Servius. We have only to suppose that a MS. of some old writer contained a sentence more or less like *Vergilius in postrema Georgicorum parte Gallum laudibus celebravit*, where *Georgicorum* was a slip for *Bucolicorum*. Such a sentence, falling into the hands of an imaginative person who knew something about the fall of Gallus, might easily lead to the invention of the story which is perpetuated by Servius. The ancient commentaries on Latin authors abound in similar figments of an undisciplined imagination.¹

I venture to hope that this simple solution will commend itself to scholars. It postulates nothing unusual, and it puts no strain upon one's credulity, whereas the Servian story bristles with improbabilities.

W. B. ANDERSON.

¹ The passage from Amm., though welcome and valuable, must not be regarded as the key-stone of this argument—indeed the theory pro-

pounded above was formed without any reference to it.

SOCRATES AND THE MYTHS.

IN Plato's *Euthyphro* two suggestions are offered to account for the accusation of impiety brought against Socrates. The first comes from Euthyphro (3b), who takes it that the accusation is directed primarily against Socrates' 'divine sign.' The second is made by Socrates himself (6a), who puts forward the view that he is being brought to trial because he refuses to accept such tales about the gods as Hesiod told regarding the maltreatment of Uranus by Cronus and of Cronus by Zeus—tales which Euthyphro not merely believes but regards as justifying his action in prosecuting his own father. Both these suggestions used to be taken at their face-value, as, for example, by Grote (*Plato* I, chap. IX). But according to J. Burnet (notes on *Euthyphro* 3b 5 and 6a 8), followed by A. E. Taylor (*Plato*, chap. VII), neither is meant to be taken seriously.

Now if both suggestions are so utterly null as Burnet and Taylor contend, it is hard to see why they are made at all. It is true that neither is discussed at any length in the dialogue. But the explanation is surely that the *Euthyphro* is, in true Socratic style, not nearly so much concerned with concrete instances of what may possibly turn out to be impiety as with the general nature of piety itself. Until a valid definition were attained (and the dialogue ends ostensibly in failure to attain it) there would be no point in Socrates' developing either Euthyphro's suggestion or his own. Hence I think Burnet wrong in the significance which he attached to the fact that 'Socrates takes no notice of' the first-mentioned suggestion. However, it is not with the first suggestion that I wish to concern myself in the present article. I propose to examine the second, which appears to be in danger of undue neglect. Regarding the first I need only say—in order to keep in proper perspective my conclusions regarding the second—that I think Xenophon (*Mem.* I i 2) correct in holding that the 'divine sign' was the chief reason for the attack on Socrates as a theological innovator; and I refer the reader to A. S. Ferguson's article on *The Impiety of Socrates* (*C.Q.* VII, p. 157) for what I consider a completely successful rebuttal of the position of Burnet and Taylor regarding the relation of the 'divine sign' to the terms of the indictment.

The second suggestion—that of Socrates himself—is apparently regarded by Burnet as merely ironical. 'No one,' he says, 'could be prosecuted for disbelieving Hesiod's *Theogony*.' Perhaps so. But it should be noticed that Socrates' suggestion is not that he is accused of such disbelief but that he is accused (of something admittedly vague) *because* of it; that is to say, the most that the suggestion means is that his attitude towards the poetic traditions played a not unimportant part in the train of events which led to his condemnation and death. Might we not say that at least it encouraged the suspicion with which Socrates was regarded by those evidently numerous persons at Athens who were conservatively minded in religious matters?

But according to Burnet and Taylor there were very few who set any store by the early myths about the gods. Taylor (*op. cit.*, p. 150, n. 1) holds that these tales 'were not taken seriously by Athenians in general'; and Burnet (on *Euthyphro* 6a 8) believed that 'respectable Athenians' took the same view regarding Homer, Hesiod and other recorders of horrible stories regarding the gods as is expressed by Isocrates in the *Busiris*, a work which censures such poets on the ground that their myths are blasphemous. Burnet's view (accepted by Taylor) is that Euthyphro, who believes the Hesiodic tales, is peculiar in his religious views; he is 'a sectary of some kind' (notes on 2a 1 and 6b 5) whose acceptance of the Hesiodic mythology is not to be

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taken as representing the belief of the average Athenian of the end of the fifth century B.C. (I take it that Burnet's 'respectable Athenians' and Taylor's 'Athenians in general' are intended to mean much the same thing.)

Now if disbelief in the myths was commonly thought the correct thing in the Athens of this time, we must abandon at once the suggestion that Socrates' condemnation was in any degree due to his disrespectful attitude towards the early poets. But the position is not so simple as Burnet and Taylor imply. The 'Athenians in general' were not sufficiently 'respectable' to refrain from putting Socrates to death for some foolish reason or some combination of foolish reasons. Since the suggestion made by Socrates in the *Euthyphro* is not, *prima facie*, absurd, it seems worth while to consider whether there is any evidence in its favour. I shall examine, first, the question whether the myths were ordinarily believed, second, the question in what respect 'sectarianism' can be attributed to Euthyphro, and thirdly I shall try to state the position of Socrates, if it be found to differ from that of his average fellow-citizens.

1. The lavish use made of the early poets for the purposes of education at Athens is well established. Plato was, as he himself states (*Rep.* 376e), merely following a long tradition in assigning an important part to poetry in the education of the young. Such an education was bound to inculcate a respect for, and belief in, the myths—even in those of the Uranus-Cronus-Zeus type. That is what Plato says, and I see no reason to question it. It was precisely because of the unworthy 'morals' contained in such myths that he sought to oust Homer, Hesiod and their fellows from the proud position of educators of Greece. (See my analysis of *Rep.* 376e sqq. in *C.Q.* XXIII, pp. 145-6.) Evidently he found his opinion justified by the facts. One need only point to the existence of those numerous eulogizers of Homer—those against whom so much of the *Republic* is directed—who declared that Homer and his fellows understood *things divine* (καὶ τὰ γε θεῖα, *Rep.* 598e; cf. 606e) as well as all things human. We cannot escape the inference that at Athens Homer and Hesiod were popularly regarded as theological authorities. Nor is there any doubt that they were so regarded in the fourth century as well as in the fifth. Even in his latest work (*Laws* 886c) Plato makes the prevalence of the old mythologies at Athens one of the main causes of atheism and immorality, just as he had done in the *Republic*. It still remained the opinion of οἱ πολλὰκις μύριοι that right education consisted in saturating the young with the works of the poets, a process which, according to Plato, involved the young in very serious danger (*Laws* 810e-811b), though its avowed object was still (as in the case of Nicias, who made his son learn Homer by heart—*Xen. Symp.* III 5) their moral improvement. Not a few other passages of Plato could be adduced to refute the view of Taylor that such stories 'were not taken seriously by Athenians in general.' For example, the opening of the *Phaedrus* shows that the myths were ordinarily believed, and, furthermore, believed in their literal sense (I ask attention to the words τῷ νομιζομένῳ, 230a 2). But a sufficient refutation is, strangely enough, provided by the *Euthyphro* itself. For Euthyphro says: 'the men themselves (i.e. those evidently numerous persons who had remonstrated with him for imitating the deeds of the gods by prosecuting his father) admit that Zeus bound his father (Cronus) for unjustly devouring his children, and that Zeus' father had mutilated his own father (Uranus) for a similar reason.' Clearly there were plenty of others as well as Euthyphro who believed Hesiod's *Theogony*; and Burnet in his note on this passage (5e 5) seems somewhat inconsistently to admit as much.

It would be strange and indeed inexplicable if there were no evidence of an exaggerated respect for the early poets (as authorities in theology and many other subjects) among the Athenians of this period. Herodotus (II 53) made Homer and Hesiod jointly responsible for the names and descriptions of the gods. And it would be easy to show how great was the reliance placed upon these poets, throughout the

history of Hellenism, in matters of religion and morals. (For example, Libanius in the fourth century of the Christian era praises the emperor Julian for his devotion to all the gods who have been made known to us *by the poets*; and begs his fellow-citizens of Antioch to consecrate their city to the gods of whose existence they had learned as children *from the study of Homer and Hesiod*.¹) But the belief that the early poets had created the mythical traditions which their poems record came into existence far earlier than Herodotus. Burnet (on *Euthyphro* 6a 8) was impressed by the fact that, so far as we know, no one complained about the protests which Xenophanes and others made against the myths. But if no one complained, it does not follow that the protests gained general acceptance or were even widely known. The hostile criticisms launched against the poets by the philosophers really indicate the kind and degree of respect which was generally accorded to Homer and Hesiod. Why did Heraclitus, for example, show such rancour against the poets? It is because 'Hesiod is most men's teacher; men think he knew many things'; it is because most men 'lacking thought and wisdom follow the poets and take the crowd for their teacher' (fr. 57, 104, Diels). The protests of the philosophers down to (and including) Plato simply represent so many vain attempts to drive the poets from what was felt by everyone (even by the philosophers) to be the sphere monopolized by the early poets, the teaching of moral and theological doctrine.

Nor must it be thought that the Athenians of the end of the fifth century were too enlightened to look any longer on Homer and Hesiod as men charged with a divinely inspired message to mankind. According to Plato (*Rep.* 365e) the sophists declared (in full agreement with Herodotus) that the traditions of the poets were the sole source of information on all questions regarding the existence and nature of the gods. The many lecturers on the poets (Protagoras, Hippias, etc.) treated them as authorities on every conceivable subject. They thought (and herein they provoked Plato's hostility—see e.g. *Phaedr.* 277-8) that knowledge of the truth could be attained by mere verbal analysis of what the poets had written. So far as the evidence goes, not even the most anarchical of the neologists made any open attempt to overthrow the authority of the poets. The ridicule of a Zoilus was the product of a later generation. Plato is next successor to Xenophanes and Heraclitus as a scourge of Homer. Whether or not they themselves believed in the myths, it is clear that the sophists found in the works of the poets a potent instrument of persuasion ready to their hands. Abundant illustrations could be given of the use of Homer and his fellow-poets for the support of very various theses. Plato himself shows many traces of the minute poetic studies of the day.

But we are here concerned most with the fact that some at least of the interpreters drew immoral lessons from the myths of the poets. It was indeed no new thing to point out that very questionable morals could be drawn from mythology. Aeschylus' *Eumenides* (*Eum.* 640-1) base an argument on Zeus' treatment of his father Cronus. But in the age of the sophists, when so many professed to regard morality as merely an arbitrary convention contrary to nature, such interpretations of the myths became more numerous and more serious. Plato at any rate took them seriously. The second book of the *Republic* sets forth at length an argument which, after the manner of 'Thrasymachus and innumerable others,' appeals to Homer and other poets to prove that injustice is not only easier than justice but pays better both in this world and the next. Callicles in the *Gorgias* (484b) has learned to quote Pindar in support of

¹ For this see Libanius, *Orat.* XVI 46, XVII 4; G. Negri, *Julian the Apostate* II, p. 486, and, for Julian's reliance on the early poets (for educating the young in paganism), pp. 388 sqq. So small was the effect of Plato's criticism of the myths and

of Aristotle's view (*Poet.* 1460b) that the poets did not create the myths (whether under divine inspiration or otherwise) but merely reflected the common opinion of their time.

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the view that might is right. The Unjust Argument in Aristophanes' *Clouds* (904-6, 1079 sqq.) adduces the mythical immoralities of the gods to disprove the existence of justice. The novel inferences which Euripides drew from the 'unhappy tales of bards' (*Heracles* 1317-9; cf. *Ion* 442-451, etc.) indicate how common such arguments were. We have no right to assume that Plato (or Aristophanes) in dealing with such arguments was attacking mere men of straw. Those many sophists who, pretending to be philosophers, merely taught 'the dogmas of the many' (*Rep.* 493a) found the works of the poets very useful for sanctioning a lax code of morals.

The prevalence of such arguments shows, not that the sophists believed in the myths, but that the majority of their hearers did. 'Thrasymachus and innumerable others' would surely not have bolstered up their anti-ethical theories by appeals to the poets had not the bulk of their hearers taken the poets at the valuation which I have tried to indicate, and accepted even such myths as those of the Uranus-Cronus-Zeus type. If 'the many' had had no belief in the myths they would not have been in any danger of finding the immoralistic deductions impressively clever. (Nor again if the myths had by this time lost all authority would allegorical interpretations of them have been as common as I have shown that they were—see *C.Q.* XXIII, pp. 142-3.)

I conclude, then, that the myths were ordinarily believed by the Athenians. Against this, Taylor refers to Aristophanes, *Clouds*, 904—the remark of the Unjust Argument which I have mentioned above—for 'the ordinary Athenian estimate' of the Uranus-Cronus-Zeus stories. Evidently he means us to suppose that the Athenians could not have accepted the inference (the unreality of justice) and therefore could not have accepted the myth either. But there was nothing impossible in their accepting the myth while rejecting the inference, or in accepting the inference while rejecting the myth. So far as I can judge from Plato (e.g. *Euthyphro* 5e) and from Aristophanes' pictures of sophistic and the reactions which it provoked, the situation was somewhat as follows. The sophists of the Thrasymachean type (as represented by Plato in *Rep.* II) did not necessarily believe in the myths; what they really cared about was their own clever theories, which it suited their book to put forward as easy deductions from the myths. (This is true to human nature; nowadays certain types of socialists who do not believe the Bible are continually quoting scripture.) The bulk of the Athenians, while accepting the myths, did not, overtly at least, accept the anti-ethical deductions of the sophists, though we may agree with Plato that to listen to interpretations of this kind was not likely to do people much good. Even if, as Plato avers, the conduct of 'the many' was characterized by sophistic principles or lack of principles, they would be quite capable of virtuous indignation on occasion against the immoralism of the sophists; and the fact that this immoralism pretended to base itself on the inspired poets would simply be an additional cause of offence. What would make this attitude possible is the fact that the principle on which the sophistic deductions rest (that the standard of morality among the gods should be the same as that which should prevail among men) would appear by no means self-evident to the Athenians (who would lean rather to the Homeric view that the gods live according to laws of their own into which it does not befit mere humans to inquire too closely). This new principle would, however, be accepted as fully valid by Socrates, as by Plato, since justice depends on reason and reason must be one and the same throughout the universe.

Burnet and Taylor refer us also to Isocrates, who in his ingenious eulogy of the Egyptian god Busiris states that the ancient poets were rightly punished for their blasphemous stories about the gods. Now what Isocrates says in a manifest *tour de force* is surely no proof that belief in the poetic traditions was not still alive and strong among large numbers of Athenians at the time of Socrates' death. Indeed

Isocrates elsewhere confirms my account of the honour in which the early poets were held. He tells us that there were still (342 B.C.) many sophists who spent their time in reciting and discussing the works of Homer, Hesiod and other poets. And though he censures these lecturers for their lack of originality, he himself regards the poets as the chief instrument of moral education: men ought (he says) to associate with such 'excellent counsellors' as Hesiod, Theognis and Phocylides, by the study of whose works one may not only learn virtue but also develop one's intelligence. He tells us that Homer has the greatest reputation for wisdom; and he is not above drawing a moral from the poet in true sophistic style: Homer (he says) has represented the gods as deliberating at times concerning the future, not because he knew that they do so, but because he wished to teach us that to men at least the knowledge of the future is forbidden. It is worth noticing too that one of the lecturers on Homer had made Isocrates somewhat unpopular by accusing him of caring nothing for the study of the poets. In reply Isocrates is at pains to make it clear that he approves of the traditional mode of education as well as of the additional branches of study established in his own lifetime (geometry, astronomy and the 'eristic' speeches). Unfortunately his promise, made at the age of ninety-four, that, unless prevented by old age or the necessity of speaking on more important matters, he would set forth his views regarding Homer and Hesiod, and put a stop to those who talked nonsense about them, remained unfulfilled. It may be fully admitted that Isocrates shows in respect of the poetic traditions a greater independence than the sophists. But that independence of his, such as it was, evidently did not meet with the approval of the numerous lecturers on the poets or of the audiences who listened to them; it must not, therefore, be taken as typical of the fourth-century, much less of the fifth-century, Athenian. The evidence of Isocrates (apart from the *Busiris*) confirms my view that, however the case may stand with other questions discussed in Plato's dialogues, the problem of Homer's place in education and in life was just as important in the fourth century as in the fifth. (The references are to Isocrates, *Bus.* 38 sqq., *Panath.* 18 sqq., *ad Nic.* 43, *adv. Soph.* 2.)

2. In the light of what I have written above, Euthyphro's position may be briefly stated. The fact that he believed the myths does not differentiate him from 'Athenians in general.' What does differentiate him from them is his acceptance of the new (sophistic) principle to which I have above referred, that the actions of the gods imply rules for men. It is clear from 5e that Euthyphro disagreed with his critics not in believing Hesiod but in drawing from the myths the inference that the example of Cronus and Zeus justified his proceedings against his own father, and in taking that inference seriously enough to act upon it. That the morality of the gods and the morality of mankind should be one and the same was just what Euthyphro's critics could not see. Granting that principle, he is perfectly justified in accusing them of inconsistency respecting the gods and respecting himself. We do not know whether Euthyphro learned this principle from Socrates or from the sophists or thought of it himself. It is the only blot upon his 'orthodoxy.' He himself cannot recognize it as a blot, for, so far as his intentions go, he is conservative and in no sense a 'New Thoughtist'; he might rather be compared to a phenomenon not uncommon in our times, a 'Fundamentalist' who has all unconsciously imbibed a strong dose of 'Higher Criticism.'

But Burnet and Taylor think that Euthyphro was 'a sectary of some kind'; his belief in the myths marks him out as a member of some peculiar people quite unlike those robust sceptics, the citizens of Athens. (This use of the word 'sectary' is open to exactly the same objection as that of the word 'orthodox' to which Burnet rightly demurs. From what central religious body could Euthyphro's 'sect' be carved out?) The proof of Euthyphro's sectarianism is, however, singularly

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unconvincing. Burnet points out that Euthyphro had spent his youth in the island of Naxos, 'one of the chief centres of Dionysiac worship,' which was 'just six miles across the water' from Paros, 'one of the seats of the Pythagorean dispersion.' It by no means follows that Euthyphro's head was filled with Dionysiac, Pythagorean and altogether un-Athenian notions. Temporary residence in Edinburgh or six miles from Edinburgh need not induce a respect for John Knox. Burnet's argument would be just as successful in proving that Euthyphro's father was a 'sectary,' though (not unnaturally) he took a very different view from that of Euthyphro upon the religious question involved; for Euthyphro's father had lived in Naxos too. Burnet, however, relies chiefly on Euthyphro's statement that he believes not only the stories about Cronus and Zeus but also still more wondrous tales of which the many are ignorant. 'This' (says Burnet in his note on 6b 5) 'is a clear indication that Euthyphro belonged to some peculiar sect.' But I cannot see that Euthyphro's statement means any more than that he claimed to have made a special study of the subject, and accordingly knew more mythology than the ordinary man. It is clear that he does not owe this expert knowledge to any special initiation, for he offers (6c 6) to tell all the myths he knows to Socrates without imposing upon the latter any observances whatsoever. It only remains to add that even if Euthyphro had an exceptional love of mysteries, it would not follow that his belief in the myths here in question was peculiar and un-Athenian. He himself says it was not. (I might here note another instance where Taylor's interpretation appears to me to run counter to the plain meaning of the text. He says that in all probability Euthyphro counted on being non-suited by the *Basileus*. But in 3e 5 Euthyphro says that he expects to be successful in his action. If he fails it will be because the *jurymen* refuse him a hearing—9b 9-10. And if the jurymen refuse him a hearing it will not be—as Burnet thinks—because his religion is not that of ordinary Athenians but because they have no sympathy with his tedious arguments and the sophistic principle—noted above—on which they are based.)

3. It is clear from the *Euthyphro* (6a) that Socrates did not believe the myths; and from the *Republic* (Bk. II, which, as Burnet rightly says, 'is perfectly in character' with the historic Socrates) that the reason for his disbelief was the immorality of the lessons which they teach. He assumed, like the sophists, that the laws of morality must apply in all consistency both to gods and to men. If Zeus mutilated Cronus, then it is right for any son to injure his father: but it is not right; therefore, the story is untrue. Such was Socrates' argument. On the other hand the argument of the immoralists was: granting that the story is true as my hearers are disposed to believe—for they wish to believe in the gods, and the poets are our only source of knowledge concerning the gods, if gods there be—then, as there is no justice among the gods, there can be no such thing as justice among men. Socrates, we may be sure, paid no lip-service (as the sophists—save, perhaps, a few professed atheists—did) to Homer and Hesiod; and his attempt to establish morality independently of the poetic traditions would therefore be more offensive to popular prejudice than the immoralism of the sophists who professed to have the poets on their side. If Euripides could be accused of impiety by Cleon (as we now know that he was), if Isocrates' lack of due enthusiasm for the poets brought him unpopularity, it is not unreasonable to suppose that there were many who would be displeased with Socrates' attitude towards the myths because they could not see how religion and morals could survive if the traditions of the poets were scrapped.

Some confirmation of this view is afforded by Xenophon's defence of Socrates against Polycrates, who had in all probability based his imaginary speech—placed as it is in the mouth of Anytus—upon the attack actually delivered against Socrates at the trial. It was alleged (*Mem.* I ii 56) that Socrates used passages from the most

celebrated poets for the purpose of teaching his associates to be tyrants and evil-doers. Hesiod's 'no work is a disgrace,' etc., he took to mean that we should stop at nothing, however dishonourable, for the sake of gain. (This line was evidently discussed in Socratic circles; see Plato's *Charmides* 163, where Critias infers from it that work cannot mean anything disgraceful like making shoes or selling pickles.) More significantly because of its political implications, a complaint was made that from Odysseus' maltreatment of Thersites, contrasted with his civility to the men of rank, Socrates deduced that, according to the poet, the men of the people should be beaten and suppressed. (To the opponents of Socrates this would appear merely a symptom of his political leanings; the most wise Homer could not have been an anti-democrat.) These examples which Xenophon has chosen (perhaps because he thought them the least formidable) have nothing to do with the myths about the gods. But the reference is clearly to Socrates' practice of analyzing the sayings and stories of the poets in order to caution his hearers against an undue reliance upon their authority. Perhaps his opponents genuinely misunderstood him; in deducing immoral or undemocratic or otherwise unpleasant precepts from the poets he may have seemed to them to be giving immorality the highest possible sanction, not vindicating morality by making it a matter of scientific reason, owing none of its validity to the ignorant and ambiguous utterance of the early poets; they could see the unpleasantness of his inferences but could not perhaps grasp the further inference that the poets were capable of being in the wrong. Aristophanes in the *Clouds* appears to have fostered some such misunderstanding; and also in the *Frogs*, where Euripides' fondness for dwelling on the unsavoury parts of mythology is referred (like all his other errors) to his associating with Socrates (v. 1491).¹ It is possible too that, much as the confused minds of Socrates' opponents disliked the exegesis common to him and to the sophists, they preferred to have the immoral deductions (with the sophists) rather than (with Socrates) to do without the myths. Socrates would, as I have said, be more unpopular with such persons than any sophist, simply because, unlike the sophists, he openly cast discredit on the poetic traditions, to attack which was to attack the very fountain-head of religion and morality.

I conclude then that neither Socrates' disbelief in the myths nor Euthyphro's belief in them (combined as this latter was with the attempt—under Socratic or sophistic influence—to put the divine morality into human practice) represents the attitude of the ordinary Athenian (who believed the myths but could not see why the divine and the human codes of conduct should be one and the same). Further, though Socrates' attitude towards Homer and Hesiod could scarcely be made the subject of a prosecution, yet it encouraged the impression that he was an innovator and a dangerous man, and therefore played some part (along with other, perhaps more important, factors) in fomenting the suspicion and unpopularity which culminated in his execution.

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¹ The helpless attitude of 'respectable Athenians' towards the unsavoury myths is illustrated by Aristophanes' treatment of Euripides. In the *Frogs* (1052) 'Euripides' asks whether the story he told about Phaedra was untrue. 'Aeschylus' replies that *it is true*, but that it should have been suppressed by the tragic poet, whose function it should be to act as school-master to the mature in years. Nor should Euripides have written about Sthenobolia, who (as Antea) figures in the *Iliad* (VI 160). Ought

not Homer also to be censured for recounting the tale, even though he passes over it very briefly, or at any rate for dwelling on stories at least equally objectionable? The explanation is that the conservative Athenian mind exempts Homer from the principles it applies to Euripides, just as it exempts the Olympians from the moral laws that should govern mankind. To the ordinary Athenian way of thinking, Homer and Hesiod were Olympians among poets.

¹ Pind.
Ol. III
² I h

METRICAL CORRESPONDENCE IN PINDAR—I.

IN his *Works of Pindar*, Vol. II, p. xxiii, Dr. L. R. Farnell discusses the admission of metrical licences into Pindar's text, and pronounces that 'the "Responson-law" should not be pressed with over-strained severity.' In general he agrees with Wilamowitz and Schroeder and disagrees with the stricter school of P. Maas. But none of these scholars have formulated the principles by which long syllables may be equated with short in Pindar's text, or even those by which two short syllables may take the place of one long and vice versa. Such attempts were made by great scholars of the past, notably by Erasmus Schmid, Hermann and Boeckh, but recent developments in metric and textual criticism have created a new attitude towards metrical problems and provided a new vocabulary. It is time that Pindar's practice was re-examined. Only from it can we deduce what his rules of composition were and find out what licences he allowed and what not. The question is important both for the textual critic and for the student of Greek metric. If we can discover the principles on which Pindar used such metrical licences, we shall be more qualified to consider emendations which involve them and to understand the rules which he set before himself when composing an ode.

I.

Of Pindar's forty-five Epinician odes, twenty-three are in a metre that used to be called 'dactylo-epitrite.' The name has no foundation in antiquity, but so long as the real name of the metre is unknown, 'dactylo-epitrite' is a useful enough label.¹ Whatever its origins and whatever the details of its use, the general character of the metre is recognizable.² It is composed mainly of two elements, a dactylic series — — — — — (—), which may be called a 'prosodiac,' and the form — — — — — (—), which used to be called 'epitrite,' and may be a trochaic dipody of which the last syllable is usually lengthened. When using this metre Pindar unquestionably allows himself to write a short syllable when exact correspondence would demand a long. His use may be analysed as follows:

1. When his metrical scheme indicates and normally supplies — — — — —, he often writes — — — — —. Examples of this are:

- | | |
|--------------|---|
| Ol. III 26 | $\bar{\text{Ι}}\text{στρίαν νιν} \cdot \bar{\text{ἐν}}\theta\alpha \text{ Λατοῦς ἰπποσῶα θνγάτηρ}$ |
| VII 1-2 | $\Phi\acute{\iota}\alpha\lambda\alpha\nu \acute{\omega}\varsigma \bar{\text{εἰ}} \text{ τις } \bar{\alpha}\phi\nu\epsilon\acute{\alpha}\varsigma \bar{\alpha}\pi\delta \chi\epsilon\iota\rho\varsigma \bar{\epsilon}\lambda\acute{\omega}\nu$
$\bar{\epsilon}\nu\delta\omicron\nu \bar{\alpha}\mu\pi\acute{\epsilon}\lambda\omicron\nu \kappa\alpha\chi\lambda\acute{\alpha}\zeta\omicron\iota\sigma\alpha\nu \delta\rho\acute{\omicron}\sigma\varphi$ |
| VIII 54 | $\bar{\epsilon}\iota \delta' \bar{\epsilon}\gamma\acute{\omega} \text{ Μελησῖα } \bar{\epsilon}\xi \bar{\alpha}\gamma\epsilon\nu\epsilon\acute{\iota}\omega\nu$ |
| XII 6 | $\bar{\pi}\acute{\omicron}\lambda\lambda' \bar{\alpha}\nu\omega, \tau\acute{\alpha} \delta' \bar{\alpha}\theta \kappa\acute{\alpha}\tau\omega \bar{\psi}\epsilon\acute{\upsilon}\delta\eta$ |
| Pyth. III 18 | $\bar{\omicron}\acute{\iota}\alpha \bar{\pi}\alpha\rho\theta\acute{\epsilon}\nu\omicron\iota \bar{\phi}\iota\lambda\acute{\epsilon}\omicron\iota\sigma\iota\nu \bar{\epsilon}\tau\acute{\alpha}\iota\rho\alpha\iota$ |
| IV 5 | $\bar{\omicron}\kappa \bar{\alpha}\pi\omicron\delta\acute{\alpha}\mu\omicron\nu \bar{\text{Ἀ}}\bar{\omicron}\bar{\phi}\lambda\lambda\omega\nu\varsigma \bar{\tau}\nu\chi\acute{\omicron}\nu\tau\omicron\varsigma \bar{\iota}\acute{\epsilon}\rho\epsilon\alpha$ |
| ib. 23 | $\bar{\delta}\acute{\epsilon}\xi\alpha\tau' \text{—} \bar{\alpha}\iota\varsigma\acute{\iota}\alpha\nu \delta' \bar{\epsilon}\pi\acute{\iota} \bar{\omicron}\bar{\iota} \bar{\text{Κ}}\bar{\rho}\nu\acute{\iota}\omega\nu$ |
| IX 16 | $\text{Ναῖς } \bar{\epsilon}\upsilon\phi\rho\alpha\nu\theta\acute{\epsilon}\iota\sigma\alpha \bar{\text{Π}}\bar{\eta}\nu\epsilon\iota\upsilon\theta \bar{\lambda}\acute{\epsilon}\chi\epsilon\iota \bar{\text{Κ}}\bar{\rho}\acute{\epsilon}\omicron\iota\omega' \bar{\epsilon}\tau\iota\kappa\tau\epsilon\nu$ |

¹ Pindar may have called it 'Dorian.' Cf. metre put forward in W. R. Hardie's *Res Metricae*.
Ol. III 5 Δωρίῳ φωνᾶν ἐναρμόξαι πεδῖλψ. I am, however, unable to accept his views about

² I have followed in the main the view of the anacrusis.

- Pyth.* IX 21 φασγάνῳ τε μαρναμένα κεράϊζεν
 ib. 121 ἔνθ' Ἀλεξίδαμος, ἐπεὶ φύγε λαιψήρην δρόμον
Nem. V 14 ἐν δίκῃ τε μὴ κεκινδυνευμένον
 IX 32 λαόν. ἐντί τοι φίλιπποί τ'
 X 1 Δαναοῦ πόλιν ἀγλαοθρόνων τε πεντήκοντα κορᾶν, Χάριτες
 ib. 73 ταχέως δ' ἐπ' ἀδελφεοῦ βίαν πάλιν χώρησεν ὁ Τυνδαρίδας
Isthm. II 14 τὰν Ξενοκράτει Ποσειδάων ὀπάσσαις
 III 15 ἴστε μὰν Κλεωνύμου
 IV 1 ἔστι μοι θεῶν ἕκατι
 ib. 15 χαλκῆν τ' Ἄρει ἄδον
 V 1-2 Μᾶτερ Ἀλίου πολυώνυμε Θεία,
 σέο ἕκατι καὶ μεγασθενὴ νόμισαν
 ib. 7-8 ἐν τ' ἀγωνίοις ἀέθλοισι ποθεινόν
 κλέος ἔπραξεν ὄντιν' ἀθρόοι στέφανοι
 VI 29 Λαομεδοντιᾶν ὑπὲρ ἀμπλακιδᾶν

In all these cases the correspondence of a short syllable to a long is guaranteed by the manuscript tradition and indisputable sense. The case for their authenticity is made doubly certain by the metric of *Nem.* VIII, which so uses the correspondence that it is impossible to say whether -ο-- or -ο-ο is the normal form. It may be noted that of the cases quoted thirteen come in the first triad of an ode. It follows that -ο-ο was regarded by Pindar as a legitimate substitute for -ο--, and that the correspondence was sufficiently common for the unusual -ο-ο to appear in the first strophe which proclaimed the particular form of the ode. In this we may legitimately see evidence that -ο-- is trochaic in origin, and that though Pindar preferred to lengthen the last syllable, he reserved the right to use the earlier form. In this his practice resembles that of Simonides.

To this class we may attribute the occasional substitution of οοο-ο for οοο--. Cases are:

- Isthm.* V 2 σέο ἕκατι καὶ μεγασθενὴ νόμισαν
 ib. 8 κλέος ἔπραξεν, ὄντιν' ἀθρόοι στέφανοι
 VI 57 Φυλακίδα γὰρ ἦλθον, ὦ Μοῖσα, ταμίας

2. Almost equally common is the substitution of -οο-οο-ο for -οο-οο--. The cases are:

- Ol.* VII 74 πρεσβυτάτον τε Ἰάλυσον ἔτεκεν Λίνδον τ'
 VIII 11 ᾗτινι σὸν γέρας ἔσπετ' ἀγλαόν
 ib. 16 Ζηνὶ γενεθλίῳ· ὃς σὲ μὲν Νεμέα πρόφατον
 ib. 17 Ἀλκιμέδοντα δὲ παρ Κρόνου λóφω
 ib. 20 ἐξένεπε κρατέων πάλα δολιχέρετμον Αἴγιναν πάτραν

- Ol.* VIII 42 Πέργαμος ἀμφὶ τεαῖς, ἥρως, χερὸς ἐργασίαις ἀλίσκεται
Pyth. I 4 ἀγχιχώρων ὁπότεν προσιμίων
 ib. 14 Πιερίδων αἰόντα, γὰν τε καὶ πόντον κατ' αἰμαμάκετον
IX 21 φασγάνῃ τε μαρναμένα κεραῖζεν ἀγρίους
Nem. V 16 στάσομαι· οὐ τοι ἅπασα κερδίων
 VIII 13 ἰκέτας Δίακοῦ σεμνῶν γονάτων πόλιός θ' ὑπὲρ φίλας
 ib. 30 ὑπ' ἀλεξιμβρότῃ λόγχῃ, τὰ μὲν ἀμφ' Ἀχιλεῖ νεοκτόνῃ
IX 13 φεύγε γὰρ Ἀμφιαρῇ ποτε θρασυμίδα
X 65 καὶ πάθον δεινὸν παλάμαις Ἀφαρητίδαι Διός· αὐτίκα γὰρ
 ib. 82 στάζειν ἥρως. ἀλλ' ἄγε τῶνδ' εἰς τοὶ ἔμπαν αἶρεσιν
XI 1 Παῖ Πέας, ἃ τε πρυτανεῖα λέλογχας, Ἔστια
 ib. 12 καὶ τὸ θαητὸν δέμας ἀτρεμίαν τε σύγγονον
Isthm. I 2 πρᾶγμα καὶ ἀσχολίας ὑπέρτερον
 II 4 ὅστις ἐὼν καλὸς εἶχεν Ἀφροδίτας
 ib. 27 γαῖαν ἀνὰ σφετέραν, τὰν δὴ καλέουσιν Ὀλυμπίου Διὸς
IV 57 ναυτιλίαισί τε πορθμὸν ἀμερώσαις
 ib. 64 τοὺς Μεγάρα τέκε οἱ Κρέοντις υἱούς

The natural explanation of this is that Pindar regarded the series -οο-οο-- as a κῶλον whose last syllable was doubtful.

Perhaps to this class belongs a single case:

- Pyth.* IV 4 ἐνθα ποτὲ χρυσέων Διὸς αἰετῶν πάρεδρος

Though there is no metrical parallel to this in Pindar, it may be justified as the extension of the principle just exemplified. The series -οο-οο-οο-- had as much right in Pindar's eyes to a final doubtful syllable as had -οο-οο--.

3. In *Pyth.* IX Pindar keeps the fourth syllable of the first line of the strophe doubtful. The normal scansion is οο-, but we find also οο-ο in

- Pyth.* IX 9 ὑπέδεκτο δ' ἀργυρόπεζ' Ἀφροδίτα
 ib. 26 κίχεν νιν λέοντί ποτ' εὐρυφάρετρας
 ib. 59 τόθι παῖδα τέξεται ὃν κλυτὸς Ἑρμᾶς
 ib. 101 ἐν Ὀλυμπίοισι τε καὶ βαθυκόλπου

This variation is found only in this poem, and seems to be the lightening of the final syllable of a minor Ionic. As Pindar rarely admits simple Ionics, this variety is of no great importance for his metric.

4. Sometimes when we expect --ο- Pindar provides ο-ο-. The cases are:

- Ol.* VII 4 νεανία γαμβρῷ προπίνων

Ol. VIII 22 $\overset{\text{u}}{\pi}\overset{-}{\alpha}\overset{\text{u}}{\rho}\overset{-}{\epsilon}\overset{\text{u}}{\delta}\overset{-}{\rho}\overset{-}{\omicron}\varsigma\overset{-}{\alpha}\overset{-}{\sigma}\overset{-}{\kappa}\overset{-}{\epsilon}\overset{-}{\iota}\overset{-}{\tau}\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\theta}\overset{-}{\epsilon}\overset{-}{\mu}\overset{-}{\iota}\varsigma$

Nem. I 1 $\overset{\text{u}}{\alpha}\overset{-}{\mu}\overset{-}{\pi}\overset{-}{\nu}\overset{-}{\epsilon}\overset{-}{\nu}\overset{-}{\mu}\overset{-}{\alpha}\overset{-}{\sigma}\overset{-}{\epsilon}\overset{-}{\mu}\overset{-}{\nu}\overset{-}{\delta}\overset{-}{\nu}\overset{-}{\text{'}}\overset{-}{\text{A}}\overset{-}{\lambda}\overset{-}{\phi}\overset{-}{\epsilon}\overset{-}{\sigma}\overset{-}{\omicron}\overset{-}{\nu}$

V 1 $\overset{\text{u}}{\omicron}\overset{-}{\nu}\overset{-}{\kappa}\overset{-}{\alpha}\overset{-}{\nu}\overset{-}{\delta}\overset{-}{\rho}\overset{-}{\iota}\overset{-}{\alpha}\overset{-}{\nu}\overset{-}{\tau}\overset{-}{\omicron}\overset{-}{\pi}\overset{-}{\omicron}\overset{-}{\iota}\overset{-}{\sigma}\overset{-}{\iota}\overset{-}{\omicron}\varsigma\overset{-}{\epsilon}\overset{-}{\iota}\overset{-}{\mu}\overset{-}{\iota}$

Isthm. I 5 $\overset{\text{u}}{\tau}\overset{-}{\iota}\overset{-}{\phi}\overset{-}{\iota}\overset{-}{\lambda}\overset{-}{\tau}\overset{-}{\epsilon}\overset{-}{\rho}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\kappa}\overset{-}{\epsilon}\overset{-}{\delta}\overset{-}{\nu}\overset{-}{\omega}\overset{-}{\nu}\overset{-}{\tau}\overset{-}{\omicron}\overset{-}{\kappa}\overset{-}{\epsilon}\overset{-}{\omega}\overset{-}{\nu}\overset{-}{\alpha}\overset{-}{\gamma}\overset{-}{\alpha}\overset{-}{\theta}\overset{-}{\iota}\overset{-}{\omicron}\varsigma$

IV 16 $\overset{\text{u}}{\alpha}\overset{-}{\lambda}\overset{-}{\lambda}\overset{-}{\text{'}}\overset{-}{\alpha}\overset{-}{\mu}\overset{-}{\epsilon}\overset{-}{\rho}\overset{-}{\alpha}\overset{-}{\gamma}\overset{-}{\alpha}\overset{-}{\rho}\overset{-}{\epsilon}\overset{-}{\nu}\overset{-}{\mu}\overset{-}{\iota}$

Unless we can accept the theory of anacrusis which makes the first syllable preparatory and outside the main plan of the strophe, these cases may be taken as examples of --u-, reverting to its original state of an iambic dipody. They are the counterpart of the first class here considered.

5. Instead of the prosodiac -uu -uu -(-) Pindar sometimes composes with the series --uu -uu-(-). When so doing he seems to keep the first syllable doubtful.

Nem. V 13 $\overset{\text{u}}{\omicron}\overset{-}{\tau}\overset{-}{\alpha}\overset{-}{\varsigma}\overset{-}{\theta}\overset{-}{\epsilon}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\text{'}}\overset{-}{\delta}\overset{-}{\nu}\overset{-}{\Psi}\overset{-}{\alpha}\overset{-}{\mu}\overset{-}{\alpha}\overset{-}{\theta}\overset{-}{\epsilon}\overset{-}{\iota}\overset{-}{\alpha}$

ib. 49 $\overset{\text{u}}{\epsilon}\overset{-}{\pi}\overset{-}{\alpha}\overset{-}{\upsilon}\overset{-}{\rho}\overset{-}{\epsilon}\overset{-}{\omicron}\overset{-}{\text{'}}\overset{-}{\chi}\overset{-}{\rho}\overset{-}{\eta}\overset{-}{\delta}\overset{-}{\text{'}}\overset{-}{\alpha}\overset{-}{\pi}\overset{-}{\text{'}}\overset{-}{\text{'A}}\overset{-}{\theta}\overset{-}{\alpha}\overset{-}{\nu}\overset{-}{\hat{\alpha}}\overset{-}{\nu}$

but

ib. 31 $\overset{-}{\epsilon}\overset{-}{\nu}\overset{-}{\hat{\alpha}}\overset{-}{\varsigma}\overset{-}{\text{'}}\overset{-}{\tau}\overset{-}{\delta}\overset{-}{\text{'}}\overset{-}{\epsilon}\overset{-}{\nu}\overset{-}{\alpha}\overset{-}{\nu}\overset{-}{\tau}\overset{-}{\iota}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\epsilon}\overset{-}{\varsigma}\overset{-}{\kappa}\overset{-}{\epsilon}\overset{-}{\nu}$

The use of a short instead of a long also occurs at

Nem. V 47 $\overset{\text{u}}{\epsilon}\overset{-}{\sigma}\overset{-}{\lambda}\overset{-}{\omicron}\overset{-}{\iota}\overset{-}{\sigma}\overset{-}{\iota}\overset{-}{\mu}\overset{-}{\alpha}\overset{-}{\rho}\overset{-}{\alpha}\overset{-}{\tau}\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\pi}\overset{-}{\epsilon}\overset{-}{\rho}\overset{-}{\iota}\overset{-}{\pi}\overset{-}{\alpha}\overset{-}{\varsigma}\overset{-}{\alpha}\overset{-}{\pi}\overset{-}{\omicron}\overset{-}{\lambda}\overset{-}{\iota}\varsigma$

Isthm. I 17 $\overset{\text{u}}{\delta}\overset{-}{\iota}\overset{-}{\phi}\overset{-}{\rho}\overset{-}{\eta}\overset{-}{\lambda}\overset{-}{\alpha}\overset{-}{\tau}\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\Lambda}\overset{-}{\alpha}\overset{-}{\kappa}\overset{-}{\epsilon}\overset{-}{\delta}\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\mu}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\iota}\overset{-}{\kappa}\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\theta}\overset{-}{\eta}\overset{-}{\beta}\overset{-}{\alpha}\overset{-}{\iota}\varsigma$

This licence is intelligible if in the form -uu -uu - the first syllable was *anceps*.

These five types are well substantiated. There is no need to alter them in our texts, as the Byzantines sometimes did, nor need an emendation which conforms to one of them be excluded on the grounds of metre. We may now consider some cases which are less well substantiated.

II.

Attempts have been made to justify texts where other forms of correspondence seem to exist. Such cases must be considered on their merits, but if they fail to fall under any metrical rule and are suspicious on other grounds as well, the presumption is strong against them. A metrical irregularity cannot be deduced from a doubtful passage, and even when the passage is unassailable on grounds of sense and language a metrical abnormality must give us pause when we are dealing with a writer so careful as Pindar. The abnormal cases are few and therefore suspicious.

1. *Pyth.* IV 50 Schroeder follows the better MSS. and prints

$\overset{-}{\nu}\overset{-}{\nu}\overset{-}{\text{'}}\overset{-}{\gamma}\overset{-}{\epsilon}\overset{-}{\mu}\overset{-}{\alpha}\overset{-}{\nu}\overset{-}{\alpha}\overset{-}{\lambda}\overset{-}{\lambda}\overset{-}{\omicron}\overset{-}{\delta}\overset{-}{\alpha}\overset{-}{\pi}\overset{-}{\alpha}\overset{-}{\nu}\overset{-}{\kappa}\overset{-}{\rho}\overset{-}{\iota}\overset{-}{\tau}\overset{-}{\delta}\overset{-}{\nu}\overset{-}{\epsilon}\overset{-}{\rho}\overset{-}{\eta}\overset{-}{\sigma}\overset{-}{\epsilon}\overset{-}{\iota}\overset{-}{\gamma}\overset{-}{\nu}\overset{-}{\nu}\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\kappa}\overset{-}{\omega}\overset{-}{\nu}$

The sense is beyond reproach, but we find a cretic instead of a dactyl, and the rhythm of the dactylic series is ruined. It seems wiser to follow Moschopoulos and

Triclinius with the simple alteration of $\overset{-}{\nu}\overset{-}{\nu}\overset{-}{\text{'}}\overset{-}{\gamma}\overset{-}{\epsilon}\overset{-}{\mu}\overset{-}{\epsilon}\overset{-}{\nu}$. There is practically no distinction of sense between $\gamma\epsilon\overset{-}{\mu}\overset{-}{\alpha}\overset{-}{\nu}$ and $\gamma\epsilon\overset{-}{\mu}\overset{-}{\epsilon}\overset{-}{\nu}$, and the change is of the slightest.

2. *Pyth.* IX 41 Schroeder follows the MSS. and prints

$\overset{-}{\alpha}\overset{-}{\iota}\overset{-}{\delta}\overset{-}{\epsilon}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\text{'}}\overset{-}{\alpha}\overset{-}{\mu}\overset{-}{\phi}\overset{-}{\alpha}\overset{-}{\delta}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\alpha}\overset{-}{\delta}\overset{-}{\epsilon}\overset{-}{\iota}\overset{-}{\alpha}\overset{-}{\varsigma}\overset{-}{\tau}\overset{-}{\upsilon}\overset{-}{\chi}\overset{-}{\epsilon}\overset{-}{\iota}\overset{-}{\nu}\overset{-}{\tau}\overset{-}{\delta}\overset{-}{\pi}\overset{-}{\rho}\overset{-}{\alpha}\overset{-}{\tau}\overset{-}{\omicron}\overset{-}{\nu}\overset{-}{\epsilon}\overset{-}{\nu}\overset{-}{\hat{\alpha}}\overset{-}{\varsigma}$

and suggests in his metrical analysis that we have a substitution of uu-- for -u--. If so, the rhythm of the successive epitrites is ruined by the introduction of an

Ionic.
and qu
inexact
ἀμφανδ
3.

where
single
this po
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of the
correct
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existen
4.

which
the sup
Scholia
correct
5.

and his
-uu-
find dif
6.

which
ground
to be
the oth
charac
96 ἀνδρ
ἀπὸ μα

or less

TI
They a
vowel

W
syllabl
This u
iambic

Ionic. T. Mommsen kept ἀμφαδόν, but suggested that the second syllable is long and quoted the parallel of ὑποφάτιες in *Pyth.* II 76. The parallel is uncertain and inexact. It is easier to follow Erasmus Schmid with the well-authenticated word ἀμφανδόν.

3. *Nem.* VIII 40 Farnell prints

αὐξεται δ' ἀρετά, χλωραῖς ἑρσαις ὥς ὅτε δένδρεον ἄσσει

where a trochee takes the place of a spondee at the beginning of the line. The single uncombined spondee is rare in the 'dactylo-epitrite' metre, occurring only in this poem and *Pyth.* I. Neither there nor in the other strophes of this ode is it equated with a trochee. The situation here is made more dubious by the corruption of the MSS., which read the unmetrical ἀσσει at the end of the line. Even the correction ἄσσει is open to grave doubts on the grounds of sense. The passage is therefore suspicious on general grounds and provides unsuitable evidence for the existence of a metrical anomaly.

4. *Nem.* XI 11 Schroeder prints

ἄνδρα δ' ἐγὼ μακαρίζω μὲν πατέρ' Ἀγησίλαν

which gives - - - - - instead of - - - - - . Ἀγησίλαν is the reading of B and has the support of fr. 123, 9 quoted by Athenaeus 601d. On the other hand D and the Scholia read the metrical Ἀρκεσίλαν. The simplest solution is that of P. Maas, who corrects both names and reads Ἀγεσίλαν.

5. *Nem.* XI 27 Schroeder prints

πενταετηρίδ' ἑορτὰν Ἡρακλέος τέθμιον

and his metrical analysis suggests that here too he is equating - - - - - with - - - - - . But Ἡρακλέος τέθμιον can be scanned as - - - - - , and for those who find difficulty with this there is Bergk's simple transposition of τέθμιον Ἡρακλέος.

6. *Isthm.* V 16 most editors read

θνατὰ θνατοῖσι πρέπει

which gives - - - - - instead of - - - - - . The phrase is beyond criticism on grounds of grammar and sense, and is the only case where Pindar may be thought to be nodding. The fault may perhaps be found in the corresponding lines. On the other hand in other passages where Pindar expresses thoughts of a similar character about man he varies his words instead of repeating them. In *Pyth.* VIII 96 ἀνδρῶν is followed by ἄνθρωπος, in fr. 61, 5 βροτέα φρενὶ is followed by θνατὰς δ' ἀπὸ ματρὸς. It is therefore possible that what Pindar wrote was the metrical

θνατὰ βροτοῖσι πρέπει

or less probably

ἀνδράσι θνατὰ πρέπει

These six cases are all open to suspicion and should probably be emended. They afford no evidence that Pindar allowed the equivalence of a long to a short vowel otherwise than in the five classes enumerated above.

III.

We may now consider when in his 'dactylo-epitrites' Pindar allows two short syllables to take the place of one long or one long to take the place of two short. This usage, familiar from the dactylic hexameter and to a lesser extent from the iambic trimeter, is open *a priori* to less objections than the casual substitution of long

and makes $\cup\cup--$ correspond to $-\cup--$. This, as we have seen, is doubtful, and Schroeder quotes as possible alternatives his own $\kappa\epsilon\iota\nu\delta\varsigma$ and Wackernagel's $\kappa\epsilon\iota\nu\delta\varsigma <\acute{\alpha}\nu>$, either of which would give $\cup\cup\cup--$ as correspondence to $-\cup--$. There is, however, no need to alter. The good MSS., with insignificant exceptions, are in favour of $\kappa\epsilon\iota\nu\delta\varsigma \epsilon\iota\eta\nu$. This gives a perfect correspondence, and the form $\kappa\epsilon\iota\nu\delta\varsigma$ is perfectly explicable if on no other grounds as a good Homeric word found at Γ376. The traditional text is perfectly sound.

2. *Nem.* V 41 Farnell prints

$\begin{array}{ccccccc} & & & & - & - & - & \cup & \cup & - \\ \text{πάντων.} & \tau\grave{\eta} & \delta' & \text{Αἰγίνα} & \text{θεᾶς,} & \text{Εὐθύμενες,} & & & & \\ \text{Νίκας} & \text{ἐν} & \text{ἀγκώνεσσι} & \text{πίτνων} & \text{ποικίλων} & \text{ἔψαυσας} & \text{ἕμνων,} & & & \end{array}$

where he claims that a spondee takes the place of a dactyl. It is rather that instead of the series $-\cup\cup-\cup\cup-$ we have $---\cup\cup-$. Farnell has the MSS. and the Scholia on his side, but the combination of $\theta\epsilon\acute{\alpha}\varsigma$ and Νίκας is extremely suspicious. Why should Pindar wish to attach this title here to Victory, who was a perfectly recognized goddess? The right lines were indicated by Mingarelli, who read $\text{Αἰγίναθεν} \omega$. From this Eduard Schwartz suggests the admirable solution $\text{Αἰγίναθε} \delta\iota\varsigma$.

3. *Isthm.* VI 63 Schroeder and Farnell both print

$\begin{array}{ccccccc} & & \cup & - & \cup & \cup & - \\ \text{τὰν} & \text{Ψαλυχιαδᾶν} & \text{δὲ} & \text{πάτρην} & \text{Χαρίτων} & & \end{array}$

and explain as the substitution of $-\cup-\cup\cup$ for $-\cup--$. With a proper name so recalcitrant as Ψαλυχιαδᾶν this explanation is by no means impossible. But as both the form and the quantity of the name are obscure, it may be wiser to follow Erasmus Schmid's reading of Ψαλυχιδᾶν .

4. *Pyth.* IV 228 Farnell follows the MSS. and prints

$\begin{array}{ccccccc} & & \cup & \cup & - & \cup & \cup & - & & - & - & - \\ \text{ἦλαν',} & \text{ἀνὰ} & \text{βωλακίας} & \text{δ' ὀργάναν} & \text{σχιζε} & \text{νῶτον} & & & & & & \end{array}$

which gives a single long syllable instead of two short in a dactylic series. The rhythm is not particularly damaged and the reading is possible. On the other hand it is the only case where the anomaly occurs, and the simple change suggested by Hermann of ὀργάναν to ὀρόγνιαν satisfies all needs.

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(To be continued.)

FURTHER NOTES ON ARISTOXENUS AND MUSICAL INTERVALS.

THE *Ἀρμονικὰ Στοιχεῖα* of Aristoxenus, being the earliest treatise on Greek Music extant, have hitherto held an unchallenged position as the foundation of much of our knowledge of ancient musical theory. Mr. R. P. Winnington-Ingram's shrewd and critical examination (*C.Q.* XXVI, 195 ff.) of the many difficulties involved in Aristoxenus' treatment of subtleties of intonation is a very welcome contribution to a thorny subject; and it is in the hope of furthering our understanding that I venture to offer these comments on one or two points where alternatives or modifications may be suggested.

Aristoxenus did not employ ratios as a means of determining the value of musical intervals, but relied upon the judgement of his ear. He elected to use an imaginary unit of measurement, viz. one-twelfth of a tone, which he could not produce or teach with precision and accuracy in theory or practice by any method available in his day. He makes no mention of the monochord, which alone afforded an avenue to the scientific determination of intervals. Discrepancies in his findings are, therefore, a foregone conclusion.

It would seem advisable under these conditions to come first of all to a decision about the kind of tone Aristoxenus had in mind in his evaluation of intervals. The only tone clearly defined by him is the major tone of ratio $\frac{9}{8}$, and on this point his reiterations leave no possible doubt.

The following passage may be cited as an instance:

'A tone is the difference in compass between the first two concords, and may be divided by three lowest denominators, as melody admits of half-tones, thirds of tones and quarter-tones, while undeniably rejecting any interval less than these. Let us designate the smallest of these intervals the smallest Enharmonic diesis, the next the smallest Chromatic diesis, and the greatest a semitone.'¹

Such statements by Aristoxenus make it quite clear that it was the major tone ($=\frac{9}{8}$ or 204 cents)² that he had in mind: whatever discrepancies or errors may result from acceptance of the 204 cent tone as working basis must be faced. In his table (p. 198) Mr. Winnington-Ingram has taken a perfect Fourth of 498 cents as the basis of his interpretation and divided it into the Aristoxenian proportions as near as he could. I append his evaluations to those derived from the logical application of Aristoxenus' own unit:

TETRACHORDAL DIVISIONS, WITH EQUIVALENTS IN CENTS.

Enharmonic.

$$\frac{1}{4} + \frac{1}{4} + 2 \text{ tones} = \text{in cents } 51 + 51 + 408 = 510$$

$$50 + 50 + 398 = 498 \text{ (W.-I.)}$$

Chromatic μαλακόν.

$$\frac{1}{8} + \frac{1}{8} + 1\frac{5}{8} \text{ tones} = \text{in cents } 68 + 68 + 374 = 510$$

$$66 + 66 + 366 = 498 \text{ (W.-I.)}$$

¹ Macr., p. 180 (Mb. 21); cf. p. 199 (Mb. 46), p. 207 (Mb. 57), p. 211 (Mb. 62).

² Thus one tone=204 cents, the half-tone=102 cents, the quarter-tone=51 cents, the third-

tone=68 cents, the sixth-tone=34 cents, the eighth-tone=25.5 cents, the twelfth-tone=17 cents, the twenty-fourth tone=8.5 cents.

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Chromatic ἡμιόλιον.

$$\frac{3}{8} + \frac{3}{8} + 1\frac{3}{4} \text{ tones} = \text{in cents } 76.5 + 76.5 + 357 = 510$$

$$75 + 75 + 348 = 498 \text{ (W.-I.)}$$

Chromatic τονιαῖον.

$$\frac{1}{2} + \frac{1}{2} + 1\frac{1}{2} \text{ tones} = \text{in cents } 102 + 102 + 306 = 510$$

$$100 + 100 + 298 = 498 \text{ (W.-I.)}$$

Chromatic (mixed, p. 52 Mb.).

$$\frac{1}{3} + \frac{2}{3} + 1\frac{1}{2} \text{ tones} = \text{in cents } 68 + 136 + 306 = 510$$

$$66 + 133 + 299 = 498 \text{ (W.-I.)}$$

Diatonic μαλακόν.

$$\frac{1}{2} + \frac{3}{4} + 1\frac{1}{4} \text{ tones} = \text{in cents } 102 + 153 + 255 = 510$$

$$100 + 149 + 249 = 498 \text{ (W.-I.)}$$

Diatonic σύντονον.

$$\frac{1}{2} + 1 + 1 \text{ tones} = \text{in cents } 102 + 204 + 204 = 510$$

$$100 + 199 + 199 = 498 \text{ (W.-I.)}$$

The vital difference between the literal interpretation of Aristoxenus' standard of valuation and the one given by Mr. Winnington-Ingram is that the former involves an error at the expense of the consonance of the Fourth: every tetrachord is found to be sharpened by 12 cents; in the latter the distortion of the Fourth has been avoided by assuming in its place the distortion, by tempering, of the smaller intervals. Now on the one hand it is incredible that the Fourths should have been distorted; on the other hand the tempering of the smaller intervals would imply the adoption of a standard tone of different value, one for which Aristoxenus provides no definition and (I believe) no implication.

It was indeed made sufficiently clear by Mr. Winnington-Ingram that he assumed tempering in this instance, not from the conviction that it was an established practice in the day of Aristoxenus, but rather from motives of expediency, in order to find a fitting basis of values that should not entail the violation of the consonance of the Fourth.

Now, while tempering on paper in cents may be adopted by some as a *pis-allev*, the suggestion that tempered intervals could have been used in the practical music of Ancient Greece must, I think, be rejected on several grounds. There is no possibility of finding a corresponding ratio of length of string or column of air to produce tempered intervals; there was no device in tuning, practicable among the Greeks, that would ensure judging tones of exactly 199 cents or tempered semitones of 100 cents; nor is there any assurance of being able to repeat such intervals at will on any degree of the scale¹; moreover, if we are to get to the root of the matter, no loose approximation has any *prima facie* claim to our consideration.

Tempering implies a departure from an established system. Before any suggestion for tempering can be seriously entertained,² it must be shown that some

¹ In relation to tempering, Erich M. von Hornbostel states 'that the most efficient of our piano tuners, making use of beats for the determination of correct tempering [an aid to the ear due to sympathetic resonance of the strings and their unisons, which is very powerful on the piano but very weak on the Kithara, if not altogether negligible.—K. S.], are wont to make errors of as much as four vibrations per second in the middle octave'—*Notiz über die Musik d. Einwohner v. Süd-New-Mecklenburg*. Abb. z. vergl. Musikwissenschaft. München, 1922, Bd. I., pp. 352-353.

A. J. Ellis has made similar statements, giving exact results of tests.

² Tempering in relation to Aristoxenus is a theory advanced by the foremost authorities of the French School, viz. A. J. Vincent, Théodore Reinach, Louis Laloy, etc., all of whom have been led to adopt tempering as a solution of the difficulties raised by the error of a comma involved in the method suggested by Aristoxenus (Macr., pp. 207-208; Mb., pp. 56-58) for verifying his assumption that the Fourth consists of two and a half tones.

powerful influence,¹ some urgent practical need or musical development had actually arisen to compel Aristoxenus and the Greeks generally to adopt the expedient of tempering or mistuning intervals, either consciously or unwittingly.

Equal temperament is a system which deliberately denatures and distorts all those intervals within the octave which man has absorbed into his inner consciousness through the ages as natural constituents of the physical basis of sound.

It has yet to be demonstrated that there was any powerful urge in the day of Aristoxenus to demand tempering. It seems evident that neither the strict application of Aristoxenus' own unit nor an interpretation dependent on a kind of tempering will provide a satisfactory account of the intonation in practical use during the period in question. Both those methods are therefore discredited.

The problem that faces us is really more fundamental than appears on the surface. We are certainly concerned with the fact which Mr. Winnington-Ingram points out that, since harmonic or vertical expansion was virtually unknown to the Ancients, the charm, interest and power of music made themselves felt mainly through subtleties of intonation; but such subtleties are meaningless until we apprehend the principles which determine their existence. Our proper quest is not the ability to identify one or another interval or division of the tetrachord, vaguely adumbrated by Aristoxenus, so much as to discover some underlying system to account for these subtleties and unusual intervals, and to trace such a system in place in the historical development of music in Greece. Happily we are not dependent solely upon the theorists for our knowledge of Greek Music: there are the few recovered fragments of hymns in alphabetical notation—the key to which is furnished by the Tables of Alypius—and there are the few surviving Auloi which preserve, in the disposition of their finger-holes, an imperishable record. No system, scale, or interval, can be deemed acceptable as a vital and significant fact in the history of Greek Music which is not corroborated by the Notation of Alypius, with all its implications, and by the testimony obtained from a practical study of the Aulos and its mouthpieces in surviving specimens. Carefully made facsimiles of the Auloi will, I believe, be found to provide a clue to unsolved problems presented by the Greek musical system.

In attempting to identify the Chroai there is an alternative course available as a substitute for the two evaluations mentioned above, which does not entail the violation of the purity of any of the intervals, and which further commends itself by being not merely speculative but a practical reality. This alternative consists in rescuing from oblivion the Harmoniai or Aulos-scales mentioned by Aristoxenus in the slighting terms he adopts towards all that emanates from the Harmonists.² Concerning these scales, he says: 'Others again, having regard to the boring of finger-holes on the flutes (αὐλοί), assume intervals of three-quarter-tones (τριῶν διέσεων³) between the three lowest Keys, etc.'

If it may here be assumed that the Harmoniai of Greek Music were derived from the Aulos-scales, it is seen that these depart from the tetrachordal system of Aristoxenus, Ptolemy and the Graeco-Roman theorists in that the unit is not the tetrachord but the octave, a fact emphasized on several occasions by Aristoxenus himself. Some of the formulae of the Chroai recorded by Ptolemy are in fact tetrachords of Aulos-scales separated from their context.

¹ When equal temperament was adopted in the eighteenth century there was a strong inducement or necessity as driving power: it was in order to satisfy the desire for modulation into various tonalities in the face of the prohibitive technical exigencies of musical instruments.

² The system of the Harmonists and the ratios of the Aulos-scales have been identified and

established by well-authenticated evidence in a work which I have in preparation for the Press.

³ P. 193 (37 Mb.). The translation by Macran of *dieus* as 'quarter-tone' is not a happy one here, for the diesis had no definite magnitude; it was valued by Aristoxenus merely as something less than a semitone.

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The ratios of the modal system of the Harmoniai and the modifications incurred during the Graeco-Roman period suggest that the most important of the shades of the genera, as recorded by Aristoxenus and Ptolemy, were segments of the Perfect Immutable System, and not merely varieties for occasional use. Thus the alternative course in the valuation of the intervals of Greek Music consists in a plea for recognizing in the Chroai of Aristoxenus his attempt to express in his own terms some of the more familiar of the Aulos-scales of the Harmonists, on which were based the ancient *ἁρμονίαι*.¹ Aristoxenus has selected those which have a perfect Fourth and Fifth on the Tonic.

These scales were evidently in high favour with an important section of the musical world of his day, judging from the violence of the polemic which Aristoxenus directs against the Aulos (Mb., pp. 39-43; Macr., pp. 194-197) and against the claim of the Harmonists that this instrument embodies the *τὴν τοῦ ἡρμουςμένου φύσιν*, which in an important sense it certainly does, in spite of anything Aristoxenus—only superficially acquainted with their teachings—may say to the contrary.

The suggested identification of the Chroai of Aristoxenus with the Harmoniai or Aulos-scales follows:

SUGGESTED IDENTIFICATION OF THE CHROAI OF ARISTOXENUS AND OTHERS
WITH TETRACHORDS DERIVED FROM THE AULOS-SCALES (OR HARMONIAI)
RECONSTRUCTED BY K. S.

Enharmonic Genus.

1. Aristoxenus ... $\frac{1}{4} + \frac{1}{4} + 2$ = in cents 51 + 51 + 408 = 510
2. Eratosthenes. Aulos-scale (Hypolydian according to K. S.) $\left\{ \frac{40}{39} \times \frac{39}{38} \times \frac{19}{18} \right.$ = in cents 44 + 45 + 409 = 498
3. Didymus. Aulos-scale (Hypodorian K. S.) $\left\{ \frac{32}{31} \times \frac{31}{30} \times \frac{5}{4} \right.$ = in cents 55 + 57 + 386 = 498

Enh.-Chromatic Genus of Four Quanta to the Fifth (Arist., p. 72 Mb.).

4. Aulos-scale (Phrygian reconstructed by K. S.) $\left\{ \frac{24}{23} \times \frac{23}{22} \times \frac{11}{9} \times \frac{9}{8} = \frac{3}{2} \right.$ = in cents 74 + 77 + 347 + 204 = 702

Chromatic Genus.

5. Aristoxenus *μαλακόν* ... $\frac{1}{3} + \frac{1}{3} + 1\frac{1}{3}$ = in cents 68 + 68 + 374 = 510
6. *ἁρμονία* (Mixolydian K. S.) $\left\{ \frac{27}{26} \times \frac{27}{25} \times \frac{6}{5} \right.$ = in cents 63 + 65 + 370 = 498
7. Aristox. *ἡμιόλιον* ... $\frac{9}{4} + \frac{9}{4} + 2\frac{1}{2}$ = in cents 76.5 + 76.5 + 357 = 510
8. *ἁρμονία* (cf. 4) (Phrygian K. S.) $\left\{ \frac{24}{23} \times \frac{23}{22} \times 1\frac{1}{2} \right.$ = in cents 74 + 77 + 347 = 498
9. Aristox. *τονιαῖον* ... $\frac{6}{12} + \frac{6}{12} + 1\frac{1}{2}$ = in cents 102 + 102 + 306 = 510
10. Eratosthenes. Aulos-scale (Hypolydian according to K. S.) $\left\{ \frac{20}{19} \times \frac{9}{8} \times \frac{6}{5} \right.$ = in cents 89 + 93 + 316 = 498
11. Aristox. (mixed Chrom., p. 52 Mb.) $\left\{ \frac{1}{3} + \frac{2}{3} + 1\frac{1}{2} \right.$ = in cents 68 + 136 + 306 = 510
12. *ἁρμονία* (Lydian K. S.) ... $\frac{27}{26} \times 1\frac{3}{2} \times \frac{6}{5}$ = in cents 65 + 138 + 316 = 520
13. Aristoxenus: *Enh.-Chrom. unnamed of Four Quanta to the Fifth* (p. 72 Mb.), identified with an Aulos-scale (Hypodorian) according to K. S. (No. 14).
14. { Pyknon of unequal parts—
The least as between Hyp. and Parh. } ... $\frac{1}{8}$ = in cents 112
The next as between Parh. and Lich. ... $\frac{1}{4}$ = in cents 119.4
The third smallest, a tone (as between Mesê and Para-mesê—K.S.) ... $\frac{9}{8}$ = in cents 204
The largest, as between Mesê and Lichanos ... $\frac{7}{6}$ = in cents 267

Sequence from Hypatê Mesôn to Paramesê $\frac{1}{8} \times \frac{1}{4} \times \frac{7}{6} \times \frac{9}{8} = \frac{3}{2}$ (K. S.) 702

¹ It is recognized that an acceptance of this paper anticipates the publication of a detailed statement involves a leap in the dark, but this work on the subject.

Diatonic Genus.

15. Aristoxenus *μαλακόν* ... $\frac{6}{12} + \frac{9}{12} + \frac{15}{12} =$ in cents 102 + 153 + 255 = 510
16. *ἁρμονία* (modified Dorian, as used in the Tonoï of the Phrygian and Lydian groups.—K. S.) $\left\{ \begin{array}{l} \frac{21}{20} \times \frac{10}{9} \times \frac{9}{8} = \text{in cents } 85 + 182 + 204 = 471 \\ \text{(i.e. 27 cents flat)} \end{array} \right.$
17. Cf. Ptolemy's *μαλακόν* ... $\frac{21}{20} \times \frac{10}{9} \times \frac{8}{7} =$ in cents 85 + 182 + 231 = 498
18. Aristoxenus *σύντονον* ... $\frac{6}{12} + \frac{12}{12} + \frac{12}{12} =$ in cents 102 + 204 + 204 = 510
or in cents 90 + 204 + 204 = 498
19. Didymus *σύντονον ἁρμονία* (Hypodorian according to K. S.) $\left\{ \begin{array}{l} \frac{16}{18} \times \frac{10}{9} \times \frac{9}{8} = \text{in cents } 112 + 182 + 204 = 498 \end{array} \right.$
20. Eratosthenes *ἁρμονία* (Hypolydian according to K. S.) $\left\{ \begin{array}{l} \frac{20}{19} \times \frac{9}{17} \times \frac{17}{16} = \text{in cents } 89 + 192.3 + 216.3 = 498 \end{array} \right.$
21. Aristoxenus (mixed with Chrom. Parh., pp. 27 and 52 Mb.) $\frac{1}{3} + 1\frac{1}{8} + 1 =$ in cents 68 + 238 + 204 = 510
22. Archytas ap. Ptolemy ... $\frac{28}{27} \times \frac{8}{7} \times \frac{9}{8} =$ in cents 63 + 231 + 204 = 498
23. *ἁρμονία* (Mixolydian according to K. S.) $\left\{ \begin{array}{l} \frac{28}{27} \times \frac{9}{8} \times \frac{8}{7} = \text{in cents } 63 + 204 + 231 = 498 \\ \text{(cf. No. 27)} \end{array} \right.$
24. Aristoxenus (mixed with Chrom. Parh.) $\frac{3}{8} + 1\frac{1}{8} + 1 =$ in cents 76.5 + 229.5 + 204 = 510
25. *ἁρμονία*, artificial formula (Phrygian according to K. S.) $\left\{ \begin{array}{l} \frac{24}{23} \times \frac{23}{20} \times \frac{10}{9} = \text{in cents } 74 + 242 + 182 = 498 \end{array} \right.$
26. *Diatonic, Aristoxenus, unnamed of Three Quanta to the Fifth* (p. 72 Mb.).
27. Diatonic with lowered Parh. interval less than a semitone $\left\{ \begin{array}{l} \frac{28}{27} = \text{in cents } 63 \\ \frac{9}{8} = \text{in cents } 204 \\ \frac{8}{7} = \text{in cents } 231 \\ \frac{9}{8} = \text{in cents } 204 \end{array} \right.$ Identical with *ἁρμονία* of Archytas. (Mixolydian according to K. S.)
28. *Diatonic, Aristoxenus, unnamed of Four Quanta to the Fifth* (p. 72 Mb.). No definition.
29. *ἁρμονία* according to K. S. See No. 16 above $\left\{ \begin{array}{l} \frac{21}{20} \times \frac{10}{9} \times \frac{9}{8} \times \frac{8}{7} = \text{in cents } 84.4 + 182 + 204 + 231 = 702 \end{array} \right.$
30. *ἁρμονία* Dorian, *σπονδαίον* according to K. S. The scale of the Elgin Aulos and of the Buceum flute from Armant $\left\{ \begin{array}{l} \frac{11}{10} \times \frac{10}{9} \times \frac{9}{8} \times \frac{8}{7} = \text{in cents } 165 + 182 + 204 + 231 = 782 \\ \text{(i.e. augmented Fifth)} \end{array} \right.$

It must be confessed on examination of the Table that it would be unreasonable to cavil at Aristoxenus for accepting as equal diesis intervals differing merely by 1 or 2 cents in the Pykna of the Enharmonic genus, and by 2 to 4 cents in those of the Chromatic: i.e. differences equivalent to ratios $\frac{1731}{1730} = 1.002$ cents; $\frac{864}{863} = 2$ cents; $\frac{513}{512} = 3.37$ cents; $\frac{324}{323} = 4.5$ cents; while the half-comma excess constant in what has been termed the strict interpretation of the Aristoxenian intervals may be expressed by ratio $\frac{143}{142}$. A sensitive ear would experience no difficulty in distinguishing the intervals $\frac{12}{11}$ and $\frac{11}{10}$ when starting from the same note, but the ear does not readily estimate such differences when the intervals follow one another in melodic succession, ascending or descending in pitch according to the *ἡμωσμένον*. It will at once be apparent that the formulae of Archytas, Eratosthenes and Didymus are claimed as Aulos-scales; nevertheless, there is no attempt in this identification merely to go over the ground already covered by the previous writer: the proposition to be elicited is quite a different one.

It is possible by reliable evidence¹ to establish the facts that these formulae are

¹ Which the scope of this little paper does not allow the writer to produce.

isolated statements by Ptolemy of parts of a homogeneous system based upon the embodiment of a natural law in the Aulos, and not merely cleverly devised divisions of the tetrachord. It seems important at the present juncture to recognize the fact that the Ditonal scale which forms the theme of the treatise of Aristoxenus plays only a very small and unimportant part in the development of music among the Greeks. For instance, it necessarily excludes the immensely significant system of Notation in which lies latent, as a final appeal, a test for the many problems and speculations which still agitate the minds of students of this subject.

A careful scrutiny of the scheme discloses the plan on which the allotment of the symbols has been made, the subtlety of which arouses the profound admiration of the present writer, whereas it provoked derision in Bellermand, who saw in it merely an ill-constructed and clumsy device, which he was at great pains to improve upon. According to the Tables of Alypius it is an indisputable fact that *not one single Tonos* among the fifteen can be produced as evidence of the use of the Ditonal scale, and only two Tonoi, the Lydian and the Hypolydian, support the accepted theory of a Perfect Immutable System consisting of five tetrachords identical in structure (but of a formula which excludes the Ditonal described by Aristoxenus). It is true that the Ditonal scale is written large over the treatises of the Graeco-Roman theorists—a fact further emphasized by the Arabs, who, after studying and translating these writings, bore the scale and its theory along their victorious path through Persia, India, North Africa, Spain and Sicily. The inference is that the scheme of Notation was the affair of the Harmonists. Ptolemy neither mentions Notation nor makes any use of it: that he was not instructed in their lore is obvious from his *Harmonics* even on the testimony of Lib. I. c. 16 alone, in which he describes the Homalon Diatonic tetrachord with a condescending indulgence as a kind of rustic yet sweet sounding *rara avis*, while using, or misusing, the ratios of that Harmonia in his Chromatic *σύντρονον*.

In short the Tables of Alypius provide entirely satisfying evidence that the scheme of Notation was devised for the Harmoniai, and that it had no connection with the Ditonal scale. The Perfect Immutable System must only be considered as a frame, consisting of a series of recognized steps or degrees, the nomenclature of which, indefinite as to the pitch and function of notes, bore only an indication of the relative sequence of positions, as demonstrated by Ptolemy in explaining the use of the *ὁνομασίαι κατὰ θέσιν καὶ κατὰ δύναμιν*.¹

The Perfect System was, therefore, equally adapted for the Ditonal and for the Harmonia. Taken at its face value it merely postulates foreknowledge of a certain scale, a precedent followed also in the system of Neums, which can be read with certainty only when the ratios of the mode indicated by the Martyria are known.

Aristoxenus likewise entirely ignores *modality*, the dominant factor in the formation of the Perfect Immutable System and of the Tonoi; the latter are also left unexplained, as Aristoxenus openly acknowledges (Mb., p. 37; Macr., p. 192), in spite of the fact that 'all that relates to the theory of Scales and Keys was promised as part of his program' (Mb., pp. 1 and 2; Macr., p. 165). The result is that the real connection of the Tonoi with the Modes and species has remained a first-class theme for speculation.

For the most part the formulae of modal scales or Harmoniai quoted in the Table are those of scales widely used in musical circles, taught in the schools of the Harmonists and traditional in Hellenistic Asia among Greeks, Arabs and Persians.

It will be remembered that the formula of the Enharmonic Harmonia of Eratosthenes is reminiscent of the frets of the Tanbur of Bagdad according to

¹ *Harm.*, Lib. II., cap 5.

Al-Farabi¹, who also describes the borings of pipes with their Arabic notation. It is at once patent that these borings of the finger-holes indicate the ratios of other Aulos-scales of the Greeks. The three formulae ascribed to Eratosthenes have a homogeneous structure from a basis common to the three genera; moreover, they are all playable upon an Aulos bored to give that Harmonia. A light is thrown upon his formula for the Diatonic genus by a passage from the *Harmonics* of Nicomachus of Gerasa (Mb., p. 24), wherein it is stated that the Diatonic tetrachord, according to the Pythagoreans, is based upon the section of the canon, 'not as erroneously expressed by Eratosthenes or Thrasyllus, but as given by Timaeus the Locrian, whom Plato followed. . . .'. The implication is that Eratosthenes was using the formula $\frac{2}{1} \times \frac{9}{8} \times \frac{1}{2} \times \frac{7}{8}$ = in cents $89 + 192 + 216 = 498$ belonging to the Aulos-harmonia, which is practically equivalent to that of the Ditonal scale of the *Timaeus*, of ratios $\frac{2}{1} \times \frac{9}{8} \times \frac{9}{8} = \frac{27}{8}$ = in cents $90 + 204 + 204 = 498$; the substitution in Ptolemy's formula must be laid at the door of Pythagorean enthusiasts. This Harmonia, which I identify as Hypolydian, actually exists as a record on the straight Elgin Aulos (British Museum) when played from Hole 2, and on a flute of Roman provenance recently discovered in Egypt,² from Hole 1.

The genesis of the three formulae of Didymus, which has followed an analogous procedure, must likewise be referred to an Aulos-scale, which I identify as Hypodorian. The different respective positions of the ratios $\frac{1}{2}$ and $\frac{9}{8}$ in the Syntonon Diatonic of Ptolemy merely signify, according to the present writer's opinion, that Ptolemy has based his procedure in the matter of ratios upon the ascending Harmonic Series.³ The formulae of Archytas as recorded by Ptolemy certainly appear to be indicated by Aristoxenus (as pointed out by Mr. Winnington-Ingram). The Diatonic of Archytas (Ptolemy's version) is practically equivalent to the Diatonic with Chromatic Parhypatê (op. cit. Mb., pp. 27 and 52). This tetrachord of Archytas—unnamed but an unmistakable fit—is described by Aristoxenus in the following proposition (Mb., p. 72). 'It is required to prove that the Diatonic genus is composed of two or of three or of four simple magnitudes' ($\mu\epsilon\gamma\epsilon\theta\eta$ = quanta, Macr.). As an example of the Fifth of two magnitudes Aristoxenus mentions the Syntonon Diatonic, a proof that his Ditone has the meaning of two equal tones, the ratio of which would depend upon the value he had in mind for his semitone. Next he states that through the lowering of Parhypate two intervals remain equal and two become unequal, so that 'there will be three quanta constituting the Diatonic genus, namely, an interval less than a semitone, a tone, and an interval greater than a tone'—it is assumed that it is the interval of one tone that is duplicated. Aristoxenus continues: 'Again, if all the parts of the Fifth become unequal, there will be four quanta comprised in the genus in question.' Since the magnitude of the diesis and of the third interval is left undefined, the tetrachord of Archytas undoubtedly fits in, while other solutions are not necessarily excluded: thus $\frac{2}{7} = 63$ cents, the $\frac{9}{8}$ tone = 204, and the $\frac{8}{7}$ tone = 231, and again the $\frac{9}{8}$ as tone of disjunction, total 702. In this order the $\frac{8}{7}$ tone is placed next the diesis and the Lichanos is at an interval of a

¹ A translation into French of Al-Farabi's treatise (*Grand Traité de la Musique*) *Kitabû L-Mûsîqî Al-Kabîr* by Baron Rodolphe d'Erlanger, as the first volume of a projected series to be published under the general title of 'La Musique Arabe.' Paris, Librairie Orientaliste, Paul Geuthner, 1930. See section on Flutes, with diagrams, pp. 263 sqq. Those who are versed in the acoustic properties of reed-blown pipes and flutes will be able to distinguish erroneous from true statements in this section. For the Tanbur of Bagdad see pp. 218 sqq. Al-Farabi, born

A.D. 872, died A.D. 950.

² The flute was found in a Roman dump during the excavation of the Bucheum by Dr. Robert Mond at Armant, with Mr. Oliver Myers as Director of the Expedition sent out by the Egypt Exploration Society.

³ Ptolemy thus uses the ratios of the Harmonic Series while demonstrating the practice by means of lengths of string, a contradiction which would account for certain difficulties in interpretation encountered throughout his treatise.

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septimal tone from Mesé, an arrangement which is in accordance with the Aulos-scale (Mixolydian according to K. S.), from which the formula of Archytas undoubtedly derives; it likewise accords with Ptolemy's division of the Fourth into two ratios, $\frac{7}{5} \times \frac{9}{8}$, whereas the tones, reversed in position as in his formula, divide the Fourth into the ratios $\frac{3}{2} \times \frac{9}{8}$, a Ditonal combination which is out of place with a Parhypate lowered to $\frac{2}{3}$. The objection to the lowering of the Diatonic Lichanos below the tone postulated between it and Mesé may be met by drawing attention to Bellermann's interpretation of Notation, according to which the interval of a $\frac{9}{8}$ tone between Lichanos and Mesé, and in analogous positions in the other four tetrachords, only occurs, unnoticed by him, in forty-six out of the seventy-five Diatonic tetrachords belonging to the fifteen Tonoï.

If we now turn to the Fifth of four magnitudes it is found that there is no indication of values of any kind given; the gates are left wide open to speculation. One fact, however, emerges, i.e. that tones of three different ratios must be found which with the addition of Parhypate will comprise a Fifth. It will be difficult to escape the admission here of the $\frac{10}{9}$ tone, unless it be assumed that Aristoxenus had in mind the $\frac{11}{9}$ tone of 192 cents occurring in the Aulos Diatonic of Eratosthenes [q.v.] as an alternative to the tone of 204 cents, a difference of half a comma. What then is this Fifth of four quanta? If the formula of the Diatonic *μαλακόν* of Aristoxenus be suggested, viz. $\frac{1}{2} + \frac{2}{3} + 1 + 1 =$ in cents $102 + 153 + 255 + 204 = 714$, which actually has four quanta, why was he silent concerning this example? Was he conscious of the excess of half a comma over the Fifth? This would be inconsistent with his acceptance of the same excess for the tetrachord interpreted literally. Aristoxenus may have had in mind a scale almost identical with Ptolemy's soft Diatonic, of ratios $\frac{2}{3} \times \frac{10}{9} \times \frac{9}{8} \times \frac{9}{8} = \frac{5}{4}$ in cents $85 + 182 + 204 + 231 = 702$, which it fits exactly. This is an Aulos-scale (see Table Nos. 16 and 29), restated by Ptolemy, possibly out of regard for the sanctity of the perfect Fourth, but which entails a violation of the principle underlying the boring of finger-holes on the Aulos. The statement by Aristoxenus of the Fourth and Fifth by quanta suggests the lower or conjunct part of the Perfect System, viz. from Hypatê Hypatôn to Paramesê. There are other Aulos-scales of four quanta which might legitimately be cited here, such as the *ὁμαλὸν διάτονον* recorded by Ptolemy and regarded by the previous writer as 'a curious scale' and 'a peculiar looking tetrachord' (pp. 201 and 204); that it was certainly not an invention of Ptolemy's is clear from his description and from the epithets *ξενικώτερον μὲν πως καὶ ἀγροικώτερον* he bestows upon it (Lib. I. C. 16). This tetrachord of ratios $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} \times \frac{1}{5}$, duplicated, has continued in use in Asia Minor to the present day in some few of the Greek churches¹ and among the Eastern Arabs.²

It may be of interest to note at this point that the *σπονδαῖον*, according to Plutarch, was a Libation Hymn played on the Aulos, and that it was duly characterized by the interval of three dieses known as *συντονώτερος σπονδειασμός*.³ Aristides Quintilianus⁴ adds that the *σπονδειασμός*, *ἐκλυσίς* and *ἐκβολή* were intervals used by the Ancients in the differentiations of their *ἁρμονίαι*: the Spondeiasmos as a rise of three dieses, the Eklysis as a fall of three dieses. The whole question bristles with controversial points which cannot be discussed here, but the epithet *συντονώτερος* applied to the *σπονδειασμός* gives the clue to the strange fact that two unusual intervals of the same magnitude were known by different names, according to their use in

¹ *Über die altgriech. Musik in der griech. Kirche*, by Dr. Joh. Tzetzis, München, 1874. See pp. 30, 52, 77, 83, 93, etc.

² Ascertained from an Arabian Professor of Music in Cairo by means of monochord tests by M. F. Grant.

³ *De Musica*, ed. Weil and Reinach, C. 11, p. 1135, pp. 42-51, §§ 108, 114-117; and C. 19, pp. 72-77, §§ 168-177. Cf. Aristoxenus, Mb., p. 37, and Macr., p. 193.

⁴ *De Musica*, Lib. I., p. 28 Mb.

ascending or descending passages respectively; the necessity for such a distinction is difficult to realize. The explanation is supplied by the fact that the epithet *συντονώτερος* is applied to the first step in the scale and draws attention to the effort required by the Aulete to produce, instead of the diesis or semitone, the larger interval of three dieses (the present writer has reason to interpret this as of ratio $\frac{11}{10}$ = 165 cents), which necessitates a tightening of the muscles controlling the glottis, in order to effect the greater compression of the breath needful to produce the higher Parhypatê. On the other hand, the *ἐκλυσις*, indicating feebleness, relaxation, bears an analogous reference to the slackening of the muscles of the glottis that takes place when the Aulete is descending to a lower note. The fact that the *σπονδειασμός* is said by Plutarch to occur in the Dorian Tonos and that the *ἐκλυσις* is attributed to Polymnestos,¹ together with the Hypolydian Tonos, in which Tonoî (read as Aulos-scales) the intervals in question are actually found in the positions specified, corroborates the statement of Aristides that these intervals were used by the Ancients in the Harmoniai. The Spondeion is the scale for which the Elgin Aulos at the British Museum was bored, starting from finger-hole 1; and it is also the scale given by the Roman flute mentioned above when played from the exit; the Spondeiasmos syntonoteros is thus obtained on both pipes and the Eklysis from the harmonic register of the flute in the descending Hypolydian Harmonia.

Thus Aristoxenus reveals the fact—hitherto overlooked—that two rival systems, both using the *σύστημα τελείον ἀμετάβολον* for the exposition of their theories, were contending for the mastery in musical matters. The Harmonists, by far the better equipped by reason of their practical application of ratio for the exact determination of intervals,² by their use of certain Katapyknotic diagrams, expressed in the *παράσημαντική* notation to which they justly assigned great importance,³ were sure of their ground. The probability is, moreover, that the monochord—the custodian of the ratios of the Harmoniai—was used in the schools, as enjoined by Pythagoras.⁴ This was the modal system of the Ancients, parts of which have survived in folk music at the present day.

The Aristoxenian non-modal system founded on the pan-pipe scale derived from a cycle of seven ascending Fourths (not *Fifths*, as commonly asserted) was later known through the theorists as ditonal. Musical opinion, misled by the sanction bestowed by the *Timaeus* of Plato upon the scale resulting from a geometrical progression by three (= cycle of perfect *Fifths*), failed to notice the difference in practice between the two.

The cycle of Fourths⁵ produces a conjunct scale having a limma as first step and a perfect Fourth on the Tonic; the cycle of *Fifths* has a tone as first step and an augmented Fourth on the Tonic—i.e. a Tritone.

In terms of melodic material for the making of music, the struggle was between the tetrachordal aggregates—as voiced by Aristoxenus and later by Ptolemy—and the octave unit of the Harmonists with their seven octave scales which they called Harmoniai.⁶ These Harmoniai were not at this time independent scales produced by the haphazard boring of finger-holes along the length of the pipe. The seven Harmoniai were kindred modal scales, produced by the operation of one law which is embodied in every pipe or flute, and which in application results in a definite series of intervals, bearing ratios conditioned by the position of the finger-holes. To the primitive pipe-maker the process is simplicity itself, but to the theorist, who is invariably constrained to begin at the wrong end, it was, and still remains, a sore puzzle; it has in consequence been left severely alone.

LONDON.

KATHLEEN SCHLESINGER.

¹ *De Musica*, pp. 112-113, C. 29, § 287.

² *Macr.*, pp. 188-189 (Mb., p. 32).

³ *Ibid.*, p. 194 sq. (Mb., pp. 39-41).

⁴ *Arist. Quint.*, Lib. III., p. 116 Mb.

⁵ Cf. Aristoxenus, *Macr.*, p. 206 (Mb., p. 55), in which the process is given for the Ditone, and by implication for the scale.

⁶ *Macr.*, p. 192 (Mb., p. 36).

PARMENIDES' TWO WAYS.

THE object of this paper is to determine the relations between the two parts of Parmenides' poem: the Way of Truth, which deduces the necessary properties of a One Being, and the False Way, which contains a cosmogony based on 'what seems to mortals, in which there is no true belief.'

The poem presents two problems. First, why does the appearance of the world belie its real nature? To Parmenides himself, as to any other mortal, diversity in time and space, change and motion, seem to exist; what is the source of error here? This is a philosophical question; and it may be doubted whether Parmenides could have given an answer that would satisfy us. The second is an historical question: Whose is the cosmogony in the second part of the poem? Is it Parmenides' own construction or a list of errors that he rejects? To this there must be one right answer, which Parmenides, if we could summon him, could give us in a moment. This is the problem I propose to discuss. The solution may throw some light on the other problem.

A review of ancient and modern controversy suggests,¹ at first sight, that every possible answer has been proposed by some critic and rejected by others. On the one side are those who regard the cosmogony as either a systematization or a mere catalogue of beliefs about the world held by ordinary men or by philosophers or both, dismissed as simply false. On this hypothesis it is hard to account for the form and contents of the poem. The views are stated in what must have been a long and detailed cosmogony in the traditional narrative style, containing features (e.g. the theory of the στεφάναι) of which there is no trace elsewhere, and other episodes (e.g. the dynastic succession of the Gods) which we should hardly look for in a doxography. Would a philosopher, wishing to discredit popular beliefs or the doctrines of rival schools, cast them into the form of a cosmogony, without a trace of irony, caricature, or criticism, so that the ancients themselves could not determine whether the doctrines were not his own? The doxographers attribute them to Parmenides himself, just like the opinions of any other philosopher.

Critics of the other party, who take the cosmogony to be Parmenides' own, have the support of Aristotle:

'Parmenides seems to speak with more insight (than Xenophanes and Melissus, who are "a little too crude"). For holding that, alongside the existent, there is no non-existent, he thinks that the existent is necessarily one and there is nothing else . . . but being constrained to fall in with obvious appearances and supposing that, whereas the One exists according to rational argument,² there is a plurality according to our senses, he restores two causes or principles, hot and cold, i.e. fire and earth; and of these he makes the hot correspond with the existent, the cold with the non-existent' (*Met.* 986b 27).

Aristotle clearly meant that Parmenides could not ignore the apparent existence of diversity and change, but felt obliged to give some account of what our senses show us, though reasoning (λόγος) had convinced him that the One Being is alone real. But it is urged, for instance, by Mr. Ross (*Aristotle's Metaphysics*, vol. 1, p. 134) that this view is inconsistent with Parmenides' own verses (8, 50), 'which imply that the second part of the poem merely states the false opinions of mortals . . . Aristotle either is simply mistaken or knows that he is merely stating what occurs in

¹ Zeller-Nestle, 17 723 ff.

² I take κατὰ τὸν λόγον to refer to Parmenides'

use of λόγος: *Frag.* 1, 36 κρῖναι δὲ λόγῳ, following the warning against the senses.

Parmenides' poem but does not belong to Parmenides' own views.' This latter suggestion (Burnet's, *E.G.P.*³ 182) must be dismissed. The Parmenides who 'speaks with more insight' and 'is constrained to fall in with obvious appearances' is the man, not a part of the poem containing views which Aristotle knew Parmenides condemned. Is Aristotle, then, simply mistaken? Or, if not, how can Parmenides dismiss a cosmogony of his own construction as wholly inconsistent with the proved nature of reality?¹

When every possible solution of a problem is open to objections that some competent critics feel to be decisive, it is wise to ask whether the problem has been rightly stated. The assumption underlying this controversy is that the two parts of the poem set forth two parallel and alternative systems of cosmology, one to be accepted as true, the other (whether it be Parmenides' own or not) to be rejected as, wholly or in some measure, false. I shall argue that this is not so, but that the two parts are consecutive chapters in a single scheme. Neither part, by itself, contains a complete system of the world. The first chapter starts from the universally accepted premiss of cosmology—a One Being or Existent Unity—and proceeds as far as rational deduction will go, but no further. The second introduces additional factors unwarranted by reason—the two 'Forms,' Fire and Night, and all that follows in their train. Once these Forms are recognized as real and admitted to the scheme, the cosmology can be, and is, continued in the traditional manner; though all that follows is vitiated by this illegitimate step.

The poem, then, as a whole follows in succession both the Ways in which the goddess promises to instruct Parmenides: the Way of 'the immovable heart of rounded Truth' in the first part and the Way of 'what seems to mortals' (*βροτῶν δόξας*, 1, 29) in the second. The Way of Seeming, as we may call it, is an illegitimate continuation of the Way of Truth. The poem does not leave it on one side, unexplored, but follows in the track of mortal error; as Theophrastus says, *Παρμενίδης ἐπ' ἀμφοτέρας ἦλθε τὰς ὁδοὺς*.

But the reader soon encounters a difficulty. Coming to Frags. 4-6, he discovers that there are not two Ways only, but three. There is another Way of untruth which Parmenides is warned against. Which of these two false Ways is to be identified with the Way of Seeming mentioned in Frag. 1 and followed in the second part? Here some earlier critics went astray. The Fragments containing the warnings must be considered in order to ascertain exactly the nature of all three Ways.

Frag. 4 and 5. 'Come, I will tell thee—hearken to my saying and lay it to heart—the only ways of inquiry that are to be thought of: the first, that *It* (That which is) *is*² and that it is impossible for it not to be, is the Way of Persuasion, for Persuasion attends on Truth. The second, that *It is not* and that it must needs not be, this, I tell thee, is a path that is utterly undiscernible (*παραπνευσθέν, gänzlich unerforschbar*, Diels); for thou couldst not know that which is not—for that is

¹ Theophrastus (*Dox.* 482) adds nothing to Aristotle's account: *Παρμενίδης . . . ἐπ' ἀμφοτέρας ἦλθε τὰς ὁδοὺς. καὶ γὰρ ὡς αἰδίων ἐστὶ τὸ πᾶν ἀποφαίνεται καὶ γένεσιν ἀποδοῦναι πειράται τῶν ὄντων οὐχ ὁμοίως περὶ ἀμφοτέρων δοξάζων, ἀλλὰ κατ' ἀλήθειαν μὲν (=κατὰ τὸν λόγον, Δλ.) ἐν τῷ πᾶν καὶ ἀγέννητον καὶ σφαιροειδὲς ὑπολαμβάνων, κατὰ δόξαν δὲ τῶν πολλῶν εἰς τὸ γένεσιν ἀποδοῦναι τῶν φαινομένων δύο ποιῶν τὰς ἀρχὰς πῦρ καὶ γῆν. The phrase κατὰ δόξαν τῶν πολλῶν is not an interpretation but simply a prose paraphrase of Parmenides' *βροτῶν δόξαι* and οὕτω δὲ κατὰ δόξαν ἔφην τάδε (Frag. 19); it tells us nothing beyond what*

we can learn from the poem itself. Theophrastus follows Aristotle in thinking that Parmenides himself (not merely his poem) 'followed both ways' (not the Way of Truth only) and 'tried to give an account of the origin of things' (not only to draw up a list of the false doctrines of others).

² ἡ μὲν ὅπως ἐστὶ τε (Simplic. *ἐστὶ γε*, Procl.) καὶ ὡς οὐκ ἐστὶ μὴ εἶναι. The lack of any subject for *ἐστὶ* suggests that Parmenides wrote *ἡ μὲν ὅπως ὅν ἐστι καὶ ὡς, κτλ.* At 8, 12 *γε* was inserted similarly in Simplic. *Ἐκ γε μὴ ὄντος* to fill up the metre after *ἐκ μὴ ὄντος* (DE) had come to be written for *ἐκ μὴ ἔόντος*.

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impossible—nor utter it. For it is the same thing that can be thought and that can be.

Frag. 6. 'This it is necessary to say and to think: *That which is, is; for it is possible for it to be, but it is not possible for "Nothing" to be.* These things I bid thee ponder; for this is the first Way of inquiry from which I hold thee back.

But, secondly, from this Way, on which mortals who know nothing wander,' etc.¹

At the outset in Frag. 4 the goddess announces the 'only ways of inquiry that are to be thought of.' Since in Frag. 1 she has promised to instruct Parmenides in two Ways—the Ways of Truth and of Seeming—the reader is disposed at this point to assume that there are only two,² and that these are the two mentioned in Frag. 4. But on reaching Frag. 6 he discovers that there are three Ways in all and that the second of the false Ways (not the first, mentioned in Frag. 4) is here described as 'the Way on which ignorant mortals wander.' Puzzled to account for the 'sudden' appearance of a third Way, he imagines that this must be somehow different from the Way of Seeming, which he has already identified with the first false Way of Frag. 4. Hence arose Bernays' notion that the second false Way of Frag. 6 must have been added to condemn the peculiar aberrations of the Heracleiteans. The result is that the 'ignorant mortals' who wander on this last Way will not be the same as the 'mortals' whose beliefs are to be found in the Way of Seeming.

Some recent critics³ have seen that this train of reasoning is fallacious. The reader should go back to Frag. 4 and observe that when the goddess announces 'the only ways of inquiry that are to be thought of,' she does not say that there are only two. Since she will proceed to describe three, presumably she intends here to announce three; and since the second false Way is the one that ignorant mortals follow, this, and not the first false Way, should be identified with the Way of 'what seems to mortals' in Frag. 1. The reader should start again and discover what the first false Way of Frag. 4 can be.

In this Fragment the goddess really intends to announce all the three Ways that are logically conceivable (*εἰσι νοῦνται*). This fact is disguised by the fragmentary condition of the text. Now the Way of Truth and the first false Way of this Fragment are alternatives, standing in direct contradiction. The starting-point of the Way of Truth is: 'That which is, is, and cannot not-be.' The starting-point of the false Way is: 'That which is, is not, and must not-be,' or (as restated in Frag. 6) 'It is possible for "Nothing" to be.' Here is a logical contradiction; one or other of these starting-points must be completely dismissed before we can advance a step in any direction. The goddess accordingly condemns the Way that leads from the second starting-point as 'utterly undiscernible'; a Way starting from nonentity that 'cannot be known or uttered' lies in total darkness and cannot be followed to any conclusions whatsoever. The decision here given to abandon all consideration of this Way is recalled at 8, 12-18, where it is denied that anything can come into being out of non-existence; 'The decision concerning these things lies in this: *It is or it is not.* But the decision has been given, as is necessary: to leave that Way upon one side as unthinkable and unnamable, for it is no true Way.' This, then, is manifestly not the false Way in which the goddess (in Frag. 1) promised to instruct Parmenides and which is actually followed in the second part. Common sense and philosophers

¹ The rest of this Fragment is quoted below.

² Burnet (*E.G.P.*³, 173), for instance, actually translates: 'the only two ways of search that can be thought of.'

³ The account here given of the three Ways owes much to Reinhardt, *Parmenides* (1916), and H. Gomperz' valuable *Psychologische Beobachtungen an griech. Philosophen* (1924). I differ from

Gomperz (p. 8) in that he regards the *first* Way of untruth (Frag. 4) as a way that can be followed, though only to false conclusions, the *second* (Frag. 6) as no way at all. Both critics rightly agree with Zeller in rejecting Bernays' identification of the second false Way (6, 4-9) with Heracleiteanism.

agreed that nothing can come out of Nothing. So no advance can be made from the premiss that all that exists was once in a state of non-existence or that nonentity can exist. The goddess does indeed say that it is 'possible to think of' (*εἰσι νοῆσαι*) three alternatives, of which this premiss is one; together they exhaust the logically conceivable possibilities. But later she calls the Way that starts from the sheer non-existence of anything 'unthinkable' (*ἀνόητον*) and 'unnamable.' Thought cannot pursue such a Way at all; there is no object for thought to think of or for language to describe significantly. If you begin by conceiving simply a state in which nothing whatsoever exists, you can never derive from that state the existence of anything. This impassable Way may be called, for distinction, the Way of Not-being. It is dismissed, once for all, in Frags. 4-6.

There are, then, three Ways in all. One is the Way of Truth, followed, so far as it will go, in the first part. The second, the Way of Not-being, cannot be followed at all. Hence the Way of Seeming, by which the poem continues in the second part, can only be the remaining false Way of Frag. 6. That this is the Way of mortal belief based upon sense experience is clear when verses 33-38 of Frag. 1 are restored to their proper place.¹ The warning against it then runs as follows:

Frag. 6, 3. 'But secondly (I hold thee back) from the Way whereon mortals who know nothing wander, two-headed; for perplexity guides the wandering thought in their breasts, and they are borne along, both deaf and blind, bemused, as undiscerning hordes,² who have determined to believe (*νενόμισται*) that it is and it is not, the same and not the same, and for whom there is a way of all things that turns back upon itself.'

Frag. 7. 'For never shall this be proved: that things that are not are;³ but do thou hold back thy thought from this Way of inquiry (= Frag. 1, 33), nor let custom that comes of much experience (*ἔθος πολίπειρον*) force thee to cast along this Way a heedless (objectless?) eye and a hearing filled with murmuring sound, but judge by reasoning the much-debated proof I utter. There is only one Way left that can be spoken of, namely that *It is*' (= Frag. 8, 1, followed by the whole Way of Truth).

I have called this Way 'the Way of Seeming' and translated *βροτῶν δόξας* (Frag. 1, 30) 'what seems to mortals,' because 'opinions' or 'beliefs' is too narrow a rendering. *Δόξα* or *τὰ δοκοῦντα* (1, 31) includes (a) what *seems real* or 'appears' to the senses; (b) what *seems true*; what all men, misled by sensible appearances, believe, and the *δόγματα* philosophers have taught on the same basis (for in the mouth of a goddess 'mortals' includes philosophers); and (c) what has *seemed right* to men (*νενόμισται*, cf. *ἔδοξε τῷ δήμῳ*), the decision they have laid down (*κατέθεντο γνώμας*) to recognize appearances and the corresponding beliefs in the conventional institution of language (*ὀνομάζειν*). This decision is mentioned where the Way of Truth denies that any second being can arise alongside the being that already exists:

'Therefore all those things will be a mere word—all the things that mortals have laid down (*κατέθεντο*) believing that they are true, namely, that it⁴ becomes and perishes, both is and is not, and changes place, and interchanges bright colour' (8, 38-41).

¹ By W. Kranz, with the approval of Diels, *Vors.* 4^{te} Aufl. (1922), I, xxviii.

² This abusive denunciation of *βροτῶν εἰδότες οὐδέν* (uninitiate, in contrast with *οἱ εἰδότες, οἱ σοφοί*) may be a traditional feature borrowed from the literature of mystic revelation. Cf. Kern, *Orphic. Frag.* 233 (= Abel, 76) *θῆρες τ' οἰωνοί τε βροτῶν τ' ἀερῶσια φύλα, | ἄχθεα γῆς, εἰώλα τετυγμένα, μῆδα μὰ μῆδέν | εἰδότες*, followed by lines in imitation of Hom. *Hymn to Demeter* 256 *νῆιδες ἀνθρώποι καὶ ἀφράδμονες οὐτ' ἀγαθοὶ | αἶσαν ἐπερχομένου προγνώμεναι οὔτε κακοῖο*. Aristoph.

Birds, 685 (Parabasis) *ἀγε δὴ φύσιν ἄνδρες ἀμυρόβιοι, φύλλον γενεῇ προσόμοιοι, | ὀλιγοδρανέες, πλάσματα πηλοῦ, σκιοειδέα φύλ' ἀμενηνά, κτλ.*

³ *εἶναι μὴ ἔντα*, not the Way of Not-being, but the mortal belief just mentioned 'that it is and it is not,' i.e. that what-is-not can be by becoming or change.

⁴ I take *ἐν*, understood, to be the subject of the infinitives in lines 40-41, but the sense is the same if the infinitives are taken in apposition to *ἔσσα*.

And again, where the Way of Seeming begins:

'For mortals have laid down their decision (*κατέθεντο γνώμας*) to name two Forms, of which it is not right to name one; and that is where they have gone astray' (8, 53-54, followed by the description of the two Forms, Fire and Night, and the whole cosmogony of the second part).

Using *δόξα* in this wide sense,¹ Parmenides means that all men—common men and philosophers alike—are agreed to believe in the ultimate reality of the world our senses seem to show us. The premiss they start from is neither the recognition of the One Being only (from which follows the Way of Truth and nothing more) nor the recognition of an original state of sheer nothingness (which would lead to the impassable Way of Not-being). What mortals do in fact accept as real and ultimate is a world of diversity in time and space, in which things 'both are and are not,' passing from non-existence to existence and back again in 'becoming and perishing,' and from being *this* ('the same') to being *something else* ('not the same') in change. They believe in this 'way of all things that turns back upon itself,' to and fro, between the poles of being and not-being or the contraries of qualitative change.² Becoming, change, and the diversity they presuppose, must be assumed by any cosmogony. They are assumed in the cosmogony of the second part. But Parmenides alone perceives exactly the point at which error begins to go beyond the limits of truth.

Now that we have the three Ways before us, it seems strange that so little use has been made of Plato's penetrating criticism of Parmenides. In the *Sophist* Plato sets his own philosophy beside the Eleatic, to determine what modifications he must make in the Way of Truth and whether any Way of Seeming can be justified. The problem he has raised (it is not wholly solved within the limits of this dialogue) is: What can be meant by 'this appearing or seeming but not being real' (*τὸ φαίνεσθαι τοῦτο καὶ τὸ δοκεῖν, εἶναι δὲ μὴ*) and the kindred problem of 'stating something, which yet is not true' (*τὸ λέγειν μὲν ἄττα, ἀληθὴ δὲ μὴ*, 236E). How can a thing exist and yet not be wholly real? How can we think or say something which has a meaning and yet is not true? These are precisely the problems of sensible appearance and false belief which beset the Way of Seeming. They belong to that intermediate region of *δόξα* defined in the *Republic* (477) as lying between the perfectly real (*τὸ παντελὲς ὄν*), which can be known (*γνωστόν*), and the perfectly unreal (*τὸ μηδαμῇ ὄν*), which corresponds to the blank absence of any form of consciousness (*ἀγνωσία*). The contents of that region are described in Parmenidean terms as 'such as both to be and not to be' (*οὕτως ἔχει ὡς εἶναι τε καὶ μὴ εἶναι, οἱ τὸ ἀμφοτέρων μετέχον, τοῦ εἶναι καὶ τοῦ μὴ εἶναι*, 478E), and they comprise the whole contents of the visible world and the fallible beliefs and enactments of common men (*τὰ τῶν πολλῶν πολλὰ νόμιμα*, 479D), in a word, all that Parmenides means by *δόξα*. Plato's three regions correspond to the three Ways, as characterized above.

¹ *Δοκεῖν* and *φαίνεσθαι* have the same wide sense in the doctrine of Parmenides' antagonist, Protagoras, as Plato shows in his dialectical criticism of Protagoras in the *Theaetetus*. At the outset (152B) the '*φαίνεται*' of *οἷα μὲν ἐμοὶ φαίνεται τοιαῦτα μὲν ἔστιν ἐμοὶ* is equated with Theaetetus' *αἰσθάνεσθαι* (= *ἐπιστήμη*). Later, the distinction between *αἰσθησις* and *δόξα* (belief, judgment) is clearly drawn, but Protagoras in the *Βοήθεια* (167A) is represented as not making any such distinction: *οὔτε γὰρ τὰ μὴ ὄντα δυνατόν δοξάσαι οὔτε ἄλλα παρ' ἃ ἂν πάσῃ, ταῦτα δὲ ἀεὶ ἀληθῆ*, 'a man cannot judge or believe what is not, nor anything beyond the affections he experiences (in

sensation and perception), and these are always true.' And further what *seems right* to any community is right for it so long as it thinks so: *οἷά γ' ἂν ἐκάστη πῶδει δίκαια καὶ καλὰ δοκῇ, ταῦτα καὶ εἶναι αὐτῇ, ὥς ἂν αὐτὰ νομίζῃ*. There is no ground for doubting that Plato correctly represents Protagoras' *μέτρον* doctrine as covering all these meanings of *δοκεῖν*. Also, as we shall see, Plato himself in *Rep.* V uses *δόξα* in the same extended sense.

² Πάντων παλιντροπος κλινθος is specially suitable as a description of the *ὁδὸς ἄνω κάτω* which figures in all the Ionian systems, not only in Heraclitus.

In the *Sophist* he approaches his problem by first considering the Way of Not-being. The discussion of τὸ μηδαμῶς ὄν (237B-239C) reaches a result in full agreement with Parmenides. It is impossible to think or speak of sheer Nonentity without self-contradiction: τὸ μὴ ὄν αὐτὸ καθ' αὐτό is ἀδιανόητον, ἀρρητον, ἀφθεγκτον, ἄλογον. As Parmenides had said, this Way of Not-being can only be left on one side as παναπειθής, ἀνόητος, ἀνώνυμος. The intermediate region of εἶδωλα and fallible belief is then (239C-242B) recalled for the purpose of defining an εἶδωλον as 'that which is not real (οὐκ ὄν ὄντως) but has some sort of existence' (ἔστι πως). The problem is to show how there can be such a thing, in despite of Parmenides' warning against the Way of Seeming.¹ This problem, however, is merely restated as confronting us more clearly now that τὸ μηδαμῶς ὄν is dismissed, and Plato turns in the other direction to review his predecessors' theories of Being or reality (242B-245E). The pre-Socratics are grouped according as they believed in only one real thing (ὄν) or in many.² The purpose is to isolate Parmenides as the sole champion of the One Being, and he alone is criticized in detail. All the argument is directed against his insistence on a unity that excludes plurality of any sort. Here Plato must break with him. Plato's own intelligible realm of reality (τὸ παντελῶς ὄν, 248E) is itself One Being, but none the less it must admit of a diversity of Ideas. Evidently Plato saw an analogy between the three realms of the *Republic* and Parmenides' three Ways, and his treatment confirms our analysis of their nature and relations. The Way of Truth and the Way of Seeming are no more parallel and alternative systems of cosmology, each complete in itself, than are Plato's accounts of the intelligible and the sensible worlds.

There can, of course, be no question of identifying Parmenides' One Being with Plato's world of Ideas and mathematical truth. The point they have in common lies in the conviction that the Real, whatever its nature, must be rational or 'intelligible' (νοητόν), and that the world as presented to our senses is not rational. Parmenides was the first to formulate a principle that has governed, for the most part unconsciously, the whole subsequent source of science: 'It is the same thing that can be thought (νοεῖν) and that can be.' The Real must be such that a rational account can be given of it: we must judge of its nature by reasoning (κρίναι λόγῳ), not by the senses. 'Rational' means that its properties must be logically necessary and coherent, deducible by that mode of thought (the revolving circle of the *Timaeus*) which makes no real progress but can start from any point in the coherent structure and come round to it again: ξινὸν δέ μοι ἔστιν ὅπποθεν ἄρξωμαι· τόθι γὰρ πάλιν ἵξομαι αὐθις. Parmenides saw, too, that diversity in time and space and all becoming and change are irrational. They are 'given' as obvious facts (Aristotle's φαινόμενα) and recognized by 'custom that comes of much experience' (ἔθος πολύπειρον), but the constant effort of science has been directed to passing behind these unaccountable data to a metaphysical or mathematical region of unseen reality where nothing new shall come into being, the cause shall contain the effect, the antecedent shall be identical with the consequent, as in a mathematical deduction proceeding by a series of equations.³ The outcome in antiquity was the scientific Atomism of Democritus, which followed Parmenides so far as to eliminate from the Real all becoming and qualitative diversity and change. But Atomism was a half-way house; it tolerated an ultimate plurality of its unchanging particles, their unexplained motion in space, and their action upon one another by shock. All this was a concession to provide a

¹ The lines quoted by Plato are Frag. 7, which belongs to this second warning.

² The Milesians are treated not as monists, but as dualists, who have two ὄντα, 'the hot and the cold.' This is in accordance with Parmenides' view that all philosophers, except him-

self, have started on the Way of Seeming with 'two Forms,' not on the Way of Truth with the One Being.

³ On this aspect of the advance of science cf. E. Meyerson, *De l'explication dans les sciences* (Paris, 1921), livre II.

mechanism supposed capable of supporting appearances. Parmenides saw what the Atomists chose to ignore: that plurality, motion, and action by shock are really just as irrational as becoming and qualitative variety. In the theory of matter it remained for Plato to take the final step nearer to the position of Parmenides. By depriving the atom of its last remnant of sensible quality—that 'hardness' which was to make it impenetrable—and reducing material substance to space, he left Physics at the point from which it was to start once more under the auspices of Descartes. Parmenides himself had conceded nothing to appearances, but declared that the Real, if it is to be rational, must be one, continuous, and unmoved.

We may now briefly review the contents of the Way of Truth, in order to define clearly the conception of reality with which it ends, before attempting to interpret the transition to the Way of Seeming. It opens (like a theorem in geometry) with an enunciation of the attributes, positive and negative, that will be proved to belong to the Real: 'Upon this Way are many marks, namely that it is ungenerated and indestructible; whole and unique; immovable; endless (in time), nor *was* it ever nor *will* it be, for it is now all at once; one; continuous' (8, 2-6). These attributes are then established by a series of astonishingly brief and penetrating arguments, refuting the contrary assumptions of common sense and of sixth-century philosophy. The arguments are rounded off by the conclusion that 'mortals' are believing in mere words when they agree that what is becomes and perishes, both is and is not, and changes in place and colour (8, 38-41). The final paragraph (8, 42-49) describes the necessary character of the Real in positive terms:

'Since then it has a furthest limit, it is perfect and complete on every side, like the mass of a rounded sphere, equally poised from the midst every way; for it cannot be greater or weaker in one place than in another. For neither is there a nothing (*οὐ τεον*, Diels, *i.e.* a void) that could stop it from attaining to sameness (continuity and homogeneity), nor could that which exists possibly be more *here* and less *there* than that which exists, since it is all inviolable. Therefore (*τοίγαρ*), equal every way, it meets evenly with its limits.'

The essential point is that all the attributes possessed by this Being belong to the categories of extension and quantity, the mathematical categories. It is a geometrical solid occupying the whole of space, having the perfect shape of the sphere, filled with continuous and homogeneous 'being' (*πάν ἐμπλεόν ἔστιν ὄντος*, 8, 24).

With this conclusion the rational deduction is complete: 'here I put an end to the trustworthy account and thought about the truth.'

Let us now contrast this geometrical Sphere of being with the primal unity of Ionian philosophy—the Water of Thales, the Unlimited stuff of Anaximander, the Air of Anaximenes. These unities had served a double purpose. (1) In the first place they were the *initial state of things*, the starting-point (*ἀρχή*) of becoming. All things were once in this state (not in a state of total Not-being). Out of it has come a world-order, with the distinct elements, fire, air, water, and earth, arranged in concentric regions. This order has superseded the initial state of things for a time, and will some day relapse into it again. But (2) the primal unity was also regarded as the *permanent ground of being*—the real 'nature of things' (*φύσις*) or underlying substance, always the same in itself, however it may be (as Aristotle says) 'modified.' This ontological substrate endures, 'immortal and imperishable'; it is not superseded by the manifold world which emerges from the initial state of things. The Ionian theory thus confused the starting-point of becoming and cosmogony, the state in which all things once were but are not now, with the permanent ground of being, what all things now and always really are. Parmenides saw that the ground of being, if it is indeed permanent and unchanging, cannot also be a physical condition of things that once existed but has been superseded by other conditions. His geo-

metrical Sphere is the Ionians' *φύσις* or eternal and changeless ground of being, deprived of all attributes not logically consistent with that character. The attributes that remain forbid that it should serve the other purpose and figure as the initial state of cosmogony. If this is the real, how could a manifold world begin to exist at some moment of time? Out of what should it come? Not out of Nothing, for (as all agreed) nothing can come out of Nothing. Not out of the One Being; for that is the All, which 'is now all at once.' And 'why sooner rather than later?' (8, 9). There can be no reason why a world (or a series of worlds) should begin at one moment rather than another, whether you say it came out of Not-being (*τοῦ μηδενὸς ἀρξάμενον*) or out of a Being described as imperishable. There can be no cosmogony starting from the permanent ground of being. In order to obtain a starting-point for becoming, further attributes must be added to the ground of being so as to constitute an initial state of things; and these attributes (as we shall see) cannot be added without contradicting the attributes already proved to belong to the ground of being.

If we turn to the rival system of the Italians, which Parmenides is thought to have had chiefly in view, the confusion of the ground of being with the starting-point of becoming is still more glaring. Our information about the earliest Pythagorean cosmology is scanty, but sufficient for our purpose. Aristotle, at the beginning of his account of the Pythagoreans (*Met.* 1025^a), says that, having been bred in the study of mathematics, they regarded the elements of numbers as the elements of all things. 'The elements of number are the even, which is unlimited, and the odd, which is limited; the One consists of both these, for it is both even and odd; number is derived from the One, and numbers are the whole Heaven (visible world).' This primitive Pythagoreanism is monistic. There is a primal unity or Monad from which the whole evolution proceeds. This contains the two elements of number, Unlimited and Limited (or Limit), which combine to produce numbers, and finally numbers are the principles or elements of the visible Heaven and of the things or bodies it contains. Aristotle next mentions the Table of Opposites (*συστοιχία*) headed by Limit and Unlimited, in which this fundamental opposition appears in nine other modes or manifestations, including Unity and Plurality, Rest and Motion, Light and Darkness.

The cosmology, then, opened with a generation of numbers from the primal Unity. The process continued in the generation of the visible Heaven and its contents. How do numbers come to be represented or embodied in visible things? Aristotle has a few references to what is evidently a primitive Pythagorean cosmogony. The Pythagoreans, he remarks (*Met.* 1091^a 12), unquestionably recognized a generation of eternal things (numbers); 'for they distinctly say that, when the One had been constructed, whether out of planes or surface (*χρoιᾶς*) or out of seed or some factors they are at a loss to describe, immediately the nearest parts of the Unlimited began to be drawn and limited by the Limit.' That this is not a description only of the generation of numbers, but of the physical process of generating a cosmos, is clear from Aristotle's next words: 'But since they are constructing a world (*κοσμοποιούσι*) and mean what they say in a physical sense,' the examination of the theory belongs to Physics. The Unlimited as a physical principle is formless Air or dark Vapour, which is 'drawn' or inhaled as the breath of the living and growing world (*Phys.* 213^b 24). The 'One' which is described as 'constructed' cannot be identical with the ungenerated Monad at the source of the whole system, but must be a manifestation or embodiment of the principle of Limit, occupying space. It is mentioned again (1080^b 20) as 'the first unit having magnitude,' and again it is said that the Pythagoreans cannot describe how it was constructed (*συνίστηναι*). Aristotle offers two conjectures. It may have been formed of planes or surface (*χρoιᾶς*, the Pythagorean equivalent for *ἐπιφάνεια*). A unit composed of planes must be a solid. We should then imagine this first solid, or body, as having position in actual space,

surrounded by the unlimited Air or darkness. It may also be regarded as a 'seed'; for the world, as a living creature, will expand from a seed to its perfect form. In one place (*de caelo* III, 5) Aristotle mentions a doctrine that Fire is the only element and has the form of the pyramid. The doctrine probably belongs to some Pythagorean, and fits the conception before us. The pyramid is the minimum solid, and the first unit having magnitude and composed of surface would have this shape. Cosmogony would begin with the appearance in the unlimited darkness of this fiery seed or atom, which then proceeds to grow and multiply by inhaling the surrounding air. The air 'separates' things (*διορίσει τὰς φύσεις*, *Ar. Phys.* 213b 22), and so a plurality of solid bodies is obtained.

It is obvious that such a scheme of cosmology (whatever the details may have been) really consists of two chapters totally different in character. The first is concerned with the mathematical ground of being; the second with the evolution of the physical world from a starting-point of becoming. The process whereby the numbers of arithmetic and the points, lines, surfaces, solids of geometry are 'generated' from the Monad is a logical process of synthesis, the reverse of a previously conducted analysis. It terminates in the construction of the geometrical solid. At this point the so-called 'process' is continued in the second chapter as the temporal process whereby the whole 'Heaven' and its contents were generated from an individual solid, a body at the centre of space, endowed with the powers of visible fire and light. The Pythagoreans were not conscious of any difficulty in this transition. Aristotle states clearly that they drew no distinction between the solid of mathematics and the physical body with sensible properties existing in time and space.

'The Pythagoreans employ less obvious principles or elements than the physicists, the reason being that they took them from non-sensible things, for mathematical objects, except those of astronomy, are without motion (*i.e.* not physical). On the other hand all their discussions and investigations are concerned with the physical world. They describe the generation of the Heaven and observe what happens to its parts, and they use up their causes and principles upon this task, which implies that they agree with the physicists that the real is the same as whatever is perceptible to the senses and comprised by the so-called "Heaven." Yet, as we said, the causes and principles they assign are adequate for the ascent to a higher class of entities (the abstractions of mathematics), and indeed appropriate to these rather than to the science of nature. How there is to be motion (implied in a physical world), if we presuppose nothing but Limit and Unlimited or Odd and Even, they altogether fail to explain; or how, without motion and change, there can be generation and dissolution or the behaviour of the bodies that move in the Heaven. Further, even if we grant that spatial magnitude is composed of these factors, or if this were proved, how can this account for some bodies being light and others heavy? For to judge by what they assume and maintain, what they say applies just as much to perceptible as to mathematical bodies; hence they have nothing to say about fire or earth or any such bodies, I suppose because they have nothing to say which applies *peculiarly* to perceptible things' (*Met.* 989b 29).

This explains how the Pythagoreans, failing to see any difference between the mathematical solid and the physical body, treated the logical derivation of the solid from numbers and the Monad as the first stage in a continuous process terminating in the formation of the whole visible 'Heaven.' The complete scheme is summarized by Alexander Polyhistor (*Diog. VIII*, 25):

'The principle of all things is the Monad; arising from this Monad the indefinite Dyad serves as material substrate to the Monad which is its cause; from the Monad and the indefinite Dyad proceed numbers; from numbers, points; from points, lines; from lines, plane figures; from plane figures, solid figures; *from solid figures, sensible bodies*, the elements of which are four, fire, water, earth, and air; these

elements change and are transformed, and from them arises a world, animate, spherical, embracing at the midst earth, itself spherical and inhabited round about.'

To return now to Parmenides. The Way of Truth stops at the border-line where logical deduction has reached the solid Sphere. This Sphere possesses only geometrical attributes, except that it is full of 'being' (though not of Fire and Night or any of the sensible opposites) and occupies the whole of actual space. It is not a cosmos; nor (until we pass beyond the Way of Truth) can any cosmos of diverse regions be generated within it. It is the ground of being, not the starting-point of becoming. In order to obtain the conception of an initial state of things from which the evolution of a manifold world can proceed, we must add to the conception of the geometrical Sphere other factors that cannot be deduced from its nature, all the sensible qualities that a physical body must possess. However we are to explain this illegitimate departure from the truth, one thing is clear: Parmenides has perceived that there can be no single continuous process which begins as a logical deduction of timeless truth and goes on as the temporal history of a physical world.

In the Way of Truth we can read his criticism of the Pythagorean (as well as of the Ionian) scheme. With regard to the first chapter, the generation from the Monad of numbers, points, lines, surfaces, solids, he must maintain that there is here no real process of 'becoming.' The Monad or One Being, divine and eternal, cannot give birth to a plurality, numbers. It is the All, and the All is timeless: 'neither was it ever nor will it be, but it is now all at once.' By what process could the One become many? Mathematics offers two processes of obtaining numbers: addition and division. Now among the puzzles which Socrates in the *Phaedo* describes as having baffled him in his youth are the puzzles presented by these so-called 'processes,' which are mentioned in the same breath with the physical processes of 'becoming and perishing.' Socrates says he can no longer admit that when one is added to one either of these ones becomes two, or that both become two because of this 'putting together' (πρόσθεσις); when they were apart they must have been two already; coming together into one another's neighbourhood cannot be the reason of their becoming two. Nor yet can a process of division (σχίσσις) make one into two. Division is the opposite of addition; how can it have the same result? Burnet remarks that 'these questions stand in close relation to Zeno's criticism of the Pythagoreans.' They might, indeed, have been formulated by Zeno in his defence of Parmenides' denial of plurality. May we not say that Parmenides himself formulates them in the Way of Truth? The One Being is called 'unique' (μονογενές, 8, 4): 'How and whence can it be increased?' (8, 7). There cannot 'arise out of not-being anything alongside of it' (8, 12); 'there is and shall be no other thing over and above that which is' (8, 36). This might mean (among other things): there can never be a second one to be added to the first and only one, so as to make two and the other numbers. The other possibility—division—is also expressly denied: 'Nor is it divisible (διαμετόν), since it is all alike; nor is there something more in one place that might hinder it from holding together, nor is there some part weaker; but it is all full of being. Therefore it is all continuous; for what is is close to what is' (8, 22). Again, 'it is equally poised from the midst every way; for it cannot be greater or weaker in one place than in another. For neither is there a nothing that could stop it from attaining to sameness, nor could that which exists possibly be more here and less there than that which exists, since it is all inviolable' (ἀσυνλον) (8, 44). Both these passages dismiss alike the Ionian notion of variations of density in their ἀπειρον σώμα—a stronger part capable of preying upon a weaker part and giving rise to the ἀδικία or reprisals¹ of Anaximander's opposites—and the Pythagorean notion of a void 'separating the natures' of the discontinuous

¹ I take ἀσυνλον (8, 44), 'inviolable,' to refer to this sense of σῶλαι.

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² Ar.

numbers. There are no interstices of 'not-being' (void) interrupting the continuity of the One Being and making it a many by division. Since the Sphere contains neither the Pythagorean void nor the warring Opposites of Anaximander, it cannot be the starting-point either of a generation of numbers or of a physical cosmogony.

There is, then, no possible transition to the second stage of Pythagorean cosmogony. That stage began with the principle of the Limit embodied as an atom filled with fire and planted in space at a centre from which it expands to take in more and more of the Unlimited, conceived as dark air. The process terminated in the visible Heaven, the physical Sphere with its fiery boundary, beyond which is the unconquered domain of boundless air, breathed in by the living world. The unit from which this process starts is not the All, but an atom or germ from which the All is to grow; and it is clearly not identical with the ungenerated Monad from which numbers and mathematical solids were to be 'generated.'

In all this the logical mind of Parmenides detected a confusion between the mathematical principles, Limit and Unlimited, which had figured in the so-called generation of numbers, and the physical 'Forms' of Fire (Light) and Air (Darkness). The mathematical limit is the boundary (*πέρας*) of the geometrical solid. To the Pythagorean, who identified the geometrical solid with the physical body, this limit was the same thing as the coloured surface (*χρoιά*) revealed by light and lost to view in the darkness of night. Limit was inevitably associated and confused with light or fire as a positive, creative principle. The Unlimited was associated with the dark and cold air of indiscriminate Night.¹ In cosmogony the Unlimited actually *is* this Night. But in geometry it is that which is bounded by the limits of the solid, namely space, and in arithmetic it is the discontinuous 'void,' the interstitial blanks of nothingness between the 'units' of number. It is here—in arithmetic—that the conception of the 'void' first appeared. This 'void' was confused by the Pythagoreans with space and with the air, which separates physical bodies or 'things.'² Parmenides saw that 'limit' is not to be simply identified with Fire or Light. Limit has its place in the Way of Truth: Necessity has fettered the Sphere of Being *ἐν πείρασιν*: it has its *πέρας πύματον*, as a figure that is perfect and complete (*τετελεισμένον*). But that limit is not visible Fire or Light, which has no place in the Way of Truth. As for the Unlimited, the interstitial void is 'nothing' and therefore cannot exist. The void was not to acquire a distinct physical existence until the Atomists identified it with the intervals of actual space (no longer confused with air) between the solid atoms filled with impenetrable tangible 'being.' Nor is Parmenides' Sphere filled with space; the Sphere itself fills space, and is filled with intangible 'being.' That 'being' is not the same thing as Darkness or Air. The Way of Truth knows nothing of these. Fire and Air, light and darkness, are only revealed by the senses; they are irrational data of experience that cannot be deduced by reasoning from the conception of a One Being. On the contrary, the real existence of these two 'Forms' is in open conflict with the conclusions of reason. The advance to cosmogony can only be made by taking a further, illegitimate, step which will set our feet at the starting-point of a possible Way of Becoming. At this point accordingly the rational argument of the *πιστὸς λόγος* ends, and the goddess changes to the manner of dogmatic narrative, not a logical deduction but a fable of the birth and

¹ Plotinus *Enn.* ii, 4, 5 compares the intelligence perceiving the dark depth of matter underlying the form (*λόγος*), which is light (*φῶς*), to the eye: *ὥσπερ ὀφθαλμὸς φωτεινῆς ὥν, πρὸς τὸ φῶς βαλὼν καὶ χροῖας φῶτα δντα, τὰ ὑπὸ τὰ χρώματα σκοτεινὰ καὶ ὕλικά εἶναι λέγει κεκρυμμένα τοῖς χρώμασιν.*

² *Ar. Phys.* 213b 22 *εἶναι δὲ ἔφασαν καὶ οἱ Πυθα-*

γόρειοι κενόν, καὶ ἐπεισείναι αὐτῷ τῷ οὐρανῷ ἐκ τοῦ ἀπείρου πνεύματος (πνεῦμα Heidel, πνεῦμά τε Diels, fort. πνεῦμά τι) ὡς ἀναπνέοντι καὶ τὸ κενόν, ὃ διορίζει τὰς φύσεις, ὡς δντος τοῦ κενοῦ χωρισμοῦ τινος τῶν ἐφεξῆς καὶ διορίσεως· καὶ τοῦτ' εἶναι πρῶτον ἐν τοῖς ἀριθμοῖς· τὸ γὰρ κενόν διορίζει τὴν φύσιν αὐτῶν.

growth of a visible world and its parts. It is now time to consider more closely the lines in which this mortal leap is taken, with open eyes fully aware of a gap that cannot be bridged.

We saw that all the attributes (marks, indications, *σήματα*, 8, 2) of Being in the Way of Truth belonged to the category of *quantity*. The attributes which mortal error has set up (*σήματ' ἔθεντο*, 8, 55) on the Way of Seeming are the Opposites of sensible *quality*, headed by the Light and Darkness of the Pythagoreans or the Hot and Cold of Anaximander. The goddess proceeds to explain, in so many words, that the illegitimate introduction of these Opposites into the Sphere converts that Sphere from a geometrical solid, filled only with continuous being, into the visible *Οὐρανός* filled with the diverse qualities or 'powers' which make bodies perceptible to the senses.

'Here I close my trustworthy account and thought about the truth (or reality): from this point onwards learn what seems to mortals, hearkening to the deceitful order of my words.'

(The cosmogony that is to follow is the history of an 'order' (*κόσμος*), not of real things, but of 'words,' those names by which mortals recognize the powers which appear to their senses and which they judge to be real.)

'For mortals have laid down their decision to name two forms (*μορφάς*), of which it is not right to name one—that is where they have gone astray—and have distinguished them as opposite in form and assigned to them marks, apart from one another: to the one (or "here") the flaming Fire of heaven, gentle, very light, in every direction the same as itself, but not the same as the other; and also that other, by itself, in opposition, blind¹ Night, a form dense and heavy. This distribution of things (*διάκοσμον*), all plausible,² I tell thee, for so no mortal thought shall ever outstrip thee.'

The phrase which, I believe, has been misinterpreted by Aristotle and Theophrastus and ever since, is *τῶν μίαν οὐ χρεὼν ἔστιν (ὀνομάζειν)*: 'of which it is not right to name one.' Aristotle supposed that mortal error lay in naming the second form, 'Night,' but that mortals were right to name the first, 'Fire.' Hence he said that Parmenides 'ranked hot or fire under Being (*κατὰ τὸ ὄν τάττει*), cold or earth under Not-being.' This must mean that Fire is real, Earth unreal, or that Fire is somehow the more real of the two, or represents the real in the world of sense. If the goddess means that mortals were right to hold anything of this sort and only wrong in naming the second form, then Parmenides himself is committed to that doctrine. But can he possibly have held it? He must have seen that our belief in the existence of fire or light or warmth rests upon precisely the same ground as our belief in the existence of earth and darkness and cold—the evidence of our senses, which see the light and feel the warmth. If he could have imagined that the belief in fire and light as real could have any rational basis, they would have figured in the Way of Truth; but there is not a word about them. Nor does any early philosopher ever conceive that one member of a pair of opposites can exist or be real without the other—that there can be light without darkness or heat without cold.

Recent critics have rejected Aristotle's view that Fire is somehow more real

¹ *νύκτ' ἀδαῆ*. There is no evidence that *ἀδαῆς* can mean simply dark (from *δᾶος*) as distinct from 'unknowing'; but darkness and ignorance are near allied.

² *εὐκλότα πάντα*. Cf. Xenophanes, 35 *ταῦτα δεδοξάσθω μὲν εὐκλότα τοῖς ἐτύμοισι*. The full phrase is regular in Epic: *ψευδέα πολλὰ λέγειν ἐτύμοισιν ὁμοῖα*, Hom. *τ* 203, cf. Theognis, 713.

A fictitious tale, but plausible, *εἰκὼς μῦθος* (*Timaeus*, 29p). Diels (*Parm. Lehrgedicht*, 10) points out the parallel between Hesiod's Muses, who say *ἴδμεν ψευδέα πολλὰ λέγειν ἐτύμοισιν ὁμοῖα*, *ἴδμεν δ' εὖτ' ἐθέλωμεν ἀληθέα γηρῶσασθαι*, and Parmenides' goddess, who instructs him both in

'*Ἀλήθεια* and *Δόξα*.

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than Night; but they have still been obsessed by his notion that τῶν μίαν οὐ χρεὼν ἔστιν does imply that mortals would have been right to name one 'Form,' and that their mistake lies in naming *two* Forms (Fire and Night) *instead of naming only the one Form, Being*: they named 'one too many.'¹ But the words can hardly bear this meaning if (as these critics hold) neither Fire nor Night is to be identified with the 'one too many.' There are, in fact, 'two too many.' All becomes clear if we see that mortals were wrong to name any 'Forms' at all. They have named 'Being': the terms ἔόν, εἶναι are in common use; but 'Being' is not a 'Form.' The lines mean: 'Mortals have laid down their decision to name *two* Forms, of which it is not right to name (so much as) *one*.' The equivalent in prose would be: ἐν οἷς οὐδὲ μίαν ἔχρην. Grammatically the words will bear this sense more naturally than the traditional rendering. Μίαν is more easily understood as contrasted with δύο than as equivalent to τὴν ἑτέραν with a partitive genitive. The whole drift and meaning of the poem demand that the sense should be: mortals, though they have named Being, have been wrong in going further and naming *in addition* two 'Forms.' One of these, Fire or Light, has been regarded as real or as more real than Night or Darkness. But no 'Forms' are real, and not one should be named. The next fragment (9) proceeds to state the consequences:

'But now that all things have been named Light and Night and the names corresponding to their several powers (τὰ κατὰ σφετέρας δυνάμεις) have been assigned to these things and to those, the All is full at once of Light and unapparent Night, both equal, since neither has any part in the other.'

'The names corresponding to their several powers' means the names of things ('qualities,' as they were to be called later) such as 'the hot,' 'the cold,' 'the light,' 'the heavy,' etc. In the fifth century, especially in the medical writers,² τὸ θερμόν (for example) was conceived as an active 'power' residing in bodies and making them able to act on (ποιεῖν) our senses and to cause changes (πάθη) in one another. 'The hot' is the power in a body which makes us 'feel hot' and heats other, colder, bodies. 'The names corresponding to (or falling under) their several powers' means a list of names of opposite 'powers' arranged, as in the Pythagorean σιστοιχία, in two sets ('these things and those') under the primary pair of opposites:

φάος (πῦρ)	σκότος (νύξ)
ἄραιόν (μανόν)	πυκνόν
ἐλαφρόν (κουφόν)	ἐμβριθές (βαρύ), etc.

Frag. 9 says: Once you have named (and so recognized as real) Fire and Night, drawn up a list of corresponding physical powers, and added all these to the

¹ Reinhardt (*Parmenides*, 70), 'Der Fehler dieser Weltanschauung ist, dass sie zwei Formen setzt statt einer.' H. Gomperz (*Psychol. Beob.* 16), 'statt einer Einheit eine Zweiheit (von der eben die eine Einheit zu viel ist, nicht angenommen werden sollte), statt des einen wahrhaft Seienden zwei nicht wahrhaft seiende Erscheinungen.'

² Cf. the evidence collected by J. Souilhé, *Étude sur le terme Δύναμις* (Paris, 1919). The prominence of this use of δύναμις in the medical writers is due to the obvious fact that a doctor is interested in substances in so far as they have the power to affect (ποιεῖν) the physical state of the 'patient' (ὁ πάσχων). Hence he has need to study δυνάμεις such as τὸ ὀξύ, τὸ πικρόν, τὸ ἀλμυρόν, etc., and discover remedies that contain the

δυνάμεις τοῦ ποιεῖν required. Souilhé (p. 26), in agreement with the scholion on 8, 56-59 (Simplicius, *Phys.* 31, 3), remarks on our passage: 'ces δυνάμεις ne sont autres que les qualités opposées: le chaud et le froid, le dur et le mou, le léger et le dense,' and points out that the term δύναμις is attributed to the doctor Alcmaeon ('before Parmenides'): 'Ἀλκμαίων τῆς μὲν ὕλης εἶναι συνεκτικὴν τὴν ἰσονομίαν τῶν δυνάμεων, ὕγροῦ ξηροῦ ψυχροῦ θερμοῦ πικροῦ καὶ τῶν λοιπῶν (Aet. V, 30, 1). At *Timaeus* 52D Plato describes a chaos of qualities. Space receives the μορφαί (qualities) of the four elements and is filled with unbalanced δυνάμεις, before the creator 'distinguished the figures of the elements with geometrical shapes and numbers' (δισχηματίσας εἰδεσί τε καὶ ἀριθμοῖς, 53B).

geometrical Sphere deduced in the first part, from that moment the All (namely the Sphere) is at once full (no longer merely of homogeneous 'being,' but) of these pairs of sensible opposites. They are equally balanced, and 'neither has any part in the other': the opposites in each pair, such as the hot and the cold, are separate things (cf. *χωρὶς ἀπ' ἀλλήλων*, 8, 56) capable of being combined in mixtures (as all colours were conceived as mixtures of bright and dark or white and black). We shall now have recognized and added to our conception of the Sphere the plurality of powers with which bodies must be endowed in order to affect our senses and to act on one another.

The ancients debated whether the Sphere described in the Way of Truth was or was not the *Οὐρανός*.¹ The answer is that it is not the *Οὐρανός* until it has been filled with the opposite powers. When the All has been so filled, it becomes the visible Heaven; the geometrical solid occupying all space becomes the perceptible physical body of the world. The addition has converted the permanent ground of being into an initial state of things, a possible starting-point of becoming—a physical body filled with opposed powers, analogous to Anaximander's unlimited body which contained the Opposites. Cosmogony can now proceed on the traditional lines:

'Frag. 10. Thou shalt know the nature of the sky, and all the signs in the sky, and the destructive operation of the sun's pure shining torch, and whence they arose; and thou shalt learn the wandering works of the round-eyed moon and her nature. Thou shalt know too the embracing Heaven and whence it was born, and how Necessity took and fettered it to hold the limits of the stars.'

The last words (*ὥς μιν ἄγουσ' ἐπέδθησεν Ἀνάγκη πείρατ' ἔχειν ἄστρον*) are meant to recall, by way of contrast, what was said of the Sphere: *κρατερὴ γὰρ Ἀνάγκη πείρατος ἐν δεσμοῖσιν ἔχει* (8, 30), and *ἐπεὶ τό γε Μοῖρ' ἐπέδθησεν οὐλον ἀκίνητόν τ' ἔμμεναι* (8, 37). The geometrical Sphere fettered by Necessity in the bonds of its mathematical limit (circumference) has now become the Sphere of the visible Heaven, that will be fettered by Necessity to hold the limits of the visible fiery stars. The 'limits of the stars' are those bands (*στέφαναι*) which Parmenides substitutes for the circles of the heavenly bodies forming the cosmic 'harmony' of the Pythagoreans. The Heaven whose 'birth' the goddess will narrate is the cosmos with its ordered regions that will emerge from the All once it has been filled with the opposite powers.

Parmenides' language in Frag. 9, taken literally, suggests that mortals are responsible for the apparent (though unreal) existence of sensible qualities. Once Fire and Night have been 'named,' the All, he says, is at once full of both. To give a thing a 'substantive' name is to recognize it as a substance. But he cannot have believed that men actually endowed the Sphere of Heaven with all its 'appearances' by an arbitrary agreement to give them names. If the appearances were not first given, how could mortals set about naming them; and as the Lord said to Job, 'Where wast thou when I laid the foundations of the earth?' But if his language cannot be taken literally, he has left the appearances unexplained. He is convinced by logic that they are inconsistent with the necessary nature of reality. Mortals are deluded by the senses, and ought not to believe in the Forms their eyes seem to reveal. Why the senses delude us, how false appearances can be given, he cannot tell. This problem was left for Plato to attempt, and he nowhere suggests that any solution is to be found in Parmenides. As himself a mortal, Parmenides feels 'constrained to fall in with obvious appearances.' He gives his fable of the birth of a visible world and all its parts, perhaps a better story than any other mortal has given. The story is 'plausible,' but not true; and he knows exactly where the error begins. If this correctly describes his point of view, the cosmogony is, as Aristotle

¹ Simplic. *Phys.* 143, 4 *οὐδὲ τῷ οὐρανῷ ἔφαρ- ὁ Εὐδημὸς φησιν ἀκούσαντας τοῦ 'πάντοθεν εὐκόλου μόντοι τὰ παρ' αὐτοῦ λεγόμενα, ὡς τινας ὑπολαβεῖν σφαίρης ἐναλίγκιον δοκῶν.'*

thought and the ancient doxographers assumed, Parmenides' own construction, not a catalogue of erroneous theories to be rejected as *alternatives* to the Way of Truth.

Had Parmenides been less clear-sighted, less uncompromisingly logical, his system would have been presented in a different form as a physical doctrine of the pattern that has ever since been familiar. The Sphere of Being, as the permanent ground of reality within or behind the visible world, would have stood in the place of that rational nature of things which has been so variously conceived by science as numbers, invisible atoms, extension, energy, waves, electrical charges, and so forth. These entities seem to common sense as far removed as the Parmenidean Sphere from the appearances they profess to support and explain; and men of science are not always able to decide whether they have a physical existence or are convenient figments of the reason, persisting in its demand that the real shall be rational. Parmenides stands alone in his candid admission that his rational reality will not explain irrational appearances, but is irreconcilable with them. Hence his system is presented in two chapters, separated by a gap which he does not pretend to have bridged and even declares to be impassable.

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VIRGIL'S BIRTHPLACE.

IN an article in the July-October number of *The Classical Quarterly* for 1932 my friend Professor Conway took many exceptions to my article 'Virgil's Birthplace Revisited' that appeared in the January and April numbers. I would refer those readers of *The Classical Quarterly* who are interested in this controversy to a reply to Professor Conway that will appear during the present year in volume XLIV of the *Harvard Studies in Classical Philology*. The text of Probus and the editorial methods of Egnatius will be considered in a doctor's thesis, now in preparation by F. M. Wheelock, Esq., of the Harvard Graduate School.

E. K. RAND.

AESCHYLUS, *AGAMEMNON*, 1227-32.

THESE lines of Cassandra's speech, as given in the MSS., run thus :

νεῶν τ' ἄπαρχος Ἰλίου τ' ἀναστάτης
οὐκ οἶδεν οἷα γλώσσα μισητῆς κυνὸς
λέξασα καὶ κτείναςα φαιδρόνους, δίκην
ἄτης λαθραίου, τεύξεται κακῇ τύχῃ.
τοιάδε τολμᾷ· θήλυς ἄρσενος φονεὺς
ἔστιν.

1230

In my recent edition of the *Agamemnon* I have transposed v. 1230, so as to follow immediately on v. 1227, and, in addition to one or two minor alterations, have proposed *κάκτῃναςα* (= καὶ ἀκτῃναςα) in place of καὶ κτείναςα, which is obviously corrupt. My revised text then runs :

νεῶν τ' ἑπαρχος Ἰλίου τ' ἀναστάτης
ἄτης λαθραίου τεύξεται κακῇ τύχῃ.
οὐκ οἶδεν οἷα γλώσσα μισητῆς κυνός·
λέξασα κάκτῃναςα φαιδρόνους δίκην,
τοιάνδε τολμᾷ· θήλυς ἄρσενος φονεὺς
ἔστιν.

While my edition was in the press, an article by Professor A. Y. Campbell appeared in the *Classical Quarterly*,¹ in which he sought to revive some old, and to introduce some new, emendations, which together should produce a text in conformity with what he calls 'a standard metaphor, the metaphor . . . of the *Treacherous Hound*.'

These emendations do not include that grotesque old favourite (proposed by Madvig and adopted by Wecklein, Sidgwick, and Wilamowitz) *κάκτείναςα φαιδρὸν οὖς*. However treacherous the hound may be, and however much it resemble a lurking Atē, Professor Campbell cannot tolerate the statement that this hound's tongue 'cocked an eager ear.' But, in his endeavour to sustain the 'standard metaphor,' he does make that tongue bite (and οἷον δάκος, 'what a bite!') as well as—but stay, let me first quote his revised version :

οὐκ οἶδεν οἷα γλώσσα μισητῆς κυνὸς
λείξασα καὶ σήναςα φαίδρ', οἷον δάκος
ἄτης λαθραίου δήξεται κακῇ τέχνῃ.

Here the palaeographical objections to Campbell's own suggestion are grave; the corruption of *φαίδρ' οἷον δάκος* into *φαιδρόνους δίκην* is manifestly improbable. Grave too is the assumption that all four of the words relating to canine habits—*λείξασα*, *σήναςα*, *δάκος*, and *δήξεται*—have suffered corruption separately and independently; the odds against such fourfold coincidence are enormous. But hardly less grave are the cynological difficulties which (*inter alia*) induced me, in establishing my own text, to reject the old emendations which Campbell now accepts.

First as regards *λείξασα* (Tyrwhitt).

Campbell translates: 'he knows not yet what sort of tongue of lecherous hound has licked its lord and fawned in welcome, and what a bite of lurking Retribution it

¹ Vol. XXVI, pp. 45-51.

shall yet inflict with heinous artifice.' So he assumes with Tyrwhitt that *λείχειν* was used of a dog licking its master's hand. But was it so used? Its normal sense is to 'lap' or 'lick up,' as a lion laps blood (*Agam.* 828) or as the Furies lap up *χοῶς αἰώνους, νηφάλια μελίγματα* (*Eum.* 106). The action of licking in a friendly way was expressed by the verb *λιχμάω*, cf. *Opp. C.* 3. 168; and Campbell adduces no evidence for the use of *λείχω* in that sense.

Secondly as regards *σήνασα* (Wakefield).

The Greeks understood by *σαίνειν*, I think, exactly that which we understand by 'fawning'; and, when we speak of a dog fawning, we include all those movements which indicate a conciliatory mode of approach on his part. He waves his tail; his whole body is sinuously appealing; his ears, which were alert when he first espied us, are now relaxed; his eyes are alight with friendship. There is true observation in Hesiod's description of Cerberus,

σαίνει ὁμῶς οὐρῇ τε καὶ οὐασιν

and in Homer's description of the dog Argus,

οὐρῇ μὲν ῥ' ὄ γ' ἔσθινε καὶ οὐατα κάββαλεν ἄμφω,

and in Sophocles' metaphorical use of the same imagery when Antigone says of Ismene

*φαιδρὰ γοῦν ἀπ' ὀμμάτων
σαίνει με προσστείχουσα.*

Yes, eyes, ears, and tail all have their part in a dog's fawning—but not his tongue. When his friendly overtures have been accepted, he may lick his master's hand, but the 'fawning' proper is the overture and not the finale.

Therefore, thirdly, even if *λείχειν* could denote licking in a friendly way, and if Aeschylus blundered too in making a dog fawn with its tongue, the order of the words *λείξασα καὶ σήνασα* would still be preposterous; a dog fawns first and licks afterwards.

And fourthly, as I have already noted in regard to *δήξεται* (Madvig), the tongue is not the implement with which a dog of any sort bites. If Agamemnon 'knows not yet what sort of tongue' will bite, I sympathize with him.

While therefore I admire the assiduity with which Professor Campbell has collected the passages of Greek literature in which is used 'the metaphor of the Treacherous Hound,' I conclude that this is not one of them; and I adhere in the main to my own restoration of the passage. I had already considered and rejected the old emendations *λείξασα, σήνασα*, and *δήξεται*, before I tried other possibilities.

But I am grateful to him for one criticism which has led me to consider once again my own version of the passage. He condemns one suggested correction of v. 1229, viz. *λέξασα κάκτείνασα*, as being too 'literal' and 'matter-of-fact' in tone. 'A tongue that talks is,' he says, 'bald enough; but a tongue that talks and expatiates is unimaginable in this frenzied speech.' I agree; and, so far as concerns *ἐκτείνασα*, I am quit of censure, for I adopted in its place *ἀκτίνεσα* ('having extolled'), which is certainly not prosaic. Given the transposition which I have made, the sense of the resulting lines demands, in place of the corrupt *καὶ κτείνασα*, some verb meaning 'to extol.' In my note on the passage I have adduced the evidence for the use of *ἀκταίνειν* in that sense.

There is indeed one possible alternative—*ἀντείνασα*. Pindar's usage of *ἀνατείνειν* in *Nem.* VIII. 58, in the phrase *τῶν δ' ἀπάντων κῦδος ἀντείνει σαθρόν*, suggests that *ἀνατείνειν δίκην*, in the sense of 'exalting' justice, may have been good Greek. Indeed, so far as the evidence of usage is concerned, there is little to choose between

ἀντεῖνασα and ἀκτῆνασα. On textual grounds however I prefer ἀκτῆνασα. The reading of the MSS., καὶ κτεῖνασα, may be explained either as an accidental corruption or as a deliberate correction; for there are in the text of Aeschylus, I am convinced, deliberate corrections equally bad—corrections by which the scribe obtained a metrical line composed of known words without troubling himself about the resulting meaning. Now if καὶ κτεῖνασα be an accidental corruption, it can equally well have arisen from κἀντεῖνασα as from κακτῆνασα; but if it be a deliberate correction, then, I argue, κακτῆνασα was the original word. For a scribe would have recognized ἀντεῖνασα or ἐντεῖνασα (whichever he assumed it to be) as an existing word, whereas he might have failed to recognize the rare ἀκτῆνασα as such, and might accordingly have doctored it. Since therefore ἀκτῆνασα satisfies either hypothesis, while ἀντεῖνασα satisfies only one of the two, I am inclined to treat ἀκτῆνασα as the preferable reading.

I still therefore advocate ἀκτῆνασα, but I am not content with λέξασα preceding it. Indeed I never have been content with it; for any Greek, who should have wished to stress the antithesis between Clytemnestra's speech and action, would naturally have written not λέξασα κακτῆνασα but λόγουσιν ἀκτῆνασα. And now Campbell's just criticism of the word has set me thinking again. Obviously that which is wanted, if the rest of my reconstruction of the passage is right, is some word of the same general meaning as ἀκτῆνασα and sufficiently vigorous and picturesque to be coupled with it. Pindar supplies me with the word I seek, and he uses it in more passages than one: e.g. *Pyth.* V. 60 σὲ δ' ἡύκομοι φλέγοντι Χάριτες, and again *Isthm.* VI (VII), 32, φλέγεται δ' ἰοβοστρήχουσι Μοῖσαι, and similarly in *Nem.* X. 4 and (in the compound ἐπιφλέγω) *Ol.* IX. 34.

So then I would read

φλέξασα κακτῆνασα φαιδρόνους δίκην,
τοιάνδ'ε τολμᾷ,

(or possibly φλέξασα κἀντεῖνασα κ.τ.λ.), and I can claim, I think, that the line is now not lacking in vigour.

As for φαιδρόνους, which Professor Campbell attacks (and which indeed could not be applied as an epithet either to a treacherous hound or to that hound's tongue), I am convinced that it is right. Campbell is wrong when he says 'φαιδρός in this kind of connexion refers invariably and inevitably to the outward appearance; the very last thing it could be referred to is the νοῦς.' Aeschylus himself (in *Choeph.* 565) has

καὶ δὴ θηρωρῶν οὕτως ἂν φαιδρᾷ φρενὶ
δέξαιτο . . .

and if φαιδρᾷ can be an epithet of φρενί, φαιδρόνους can be a compound adjective in the same sense. Indeed φαιδρόνους is not only possible, but, as applied to Clytemnestra, it is magnificently apt. When she spoke that passage which culminates in the line of which Cassandra is here thinking,

ἐς δᾶμ' ἄελπτον ὥς ἂν ἡγήται Δίκη,

there was a smile in her heart and not on her lips only. Well may Cassandra say οἷα γλώσσα.

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THE COMPOSITION OF ARISTOTLE'S LOGICAL WORKS.

THE question discussed in this paper is the relation of the *Topics* (including the *Sophistici Elenchi*) to the two *Analytics*. The smaller works are here ignored.

I. EVIDENCE OF CROSS-REFERENCES.

(a) The first six books of the *Topics* seem to make no reference to any other Aristotelian work. This is a strong *prima facie* argument that they existed before Aristotle's architectonic was planned and are as early as any other of Aristotle's writings.

(b) *Top.* VII refers in the past tense, though not by name, to a discussion of definition which may be that of *An. Po.* II, 13. Since, however, the doctrine is contradictory of that in the *Analytics*, this reference is at least doubtful. *Top.* VIII refers twice¹ to the *Analytics* by name as an existing work: the second book of our *Prior Analytics* seems to be the work referred to. *Top.* IX (S.E.) refers to the *Analytics* as a completed discussion of demonstrative arguments. In another passage it appears to refer to the famous definition of the syllogism given in *An. Pr.* I, 1.² This constitutes *prima facie* evidence that in its last three books the *Topics* overlaps the *Analytics* in time.

(c) The *Prior Analytics* in its first book refers to the *Topics* as a completed treatise on dialectic, and contains also an explicit reference to the first book of the *Topics*. In its second book it has two explicit references in the past tense to the *Topics*, Books VIII and IX respectively.

This confirms the evidence of the *Topics* and suggests the possibility that the order of composition was (1) *Top.* I-VI (or VII), (2) *An. Pr.* I, (3) *Top.* VII-IX (or VIII-IX), (4) *An. Pr.* II. The fact, however, that each treatise refers to the other in the past may be held to indicate that at some time a change in the architectonic plan resulted in the reversal of the order of the two treatises. At first perhaps the *Topics* was to precede the *Prior Analytics*; later the *Prior Analytics* was made to precede the *Topics*.

(d) The *Posterior Analytics* contains no reference to the *Topics* at all in either of its books, either explicit or implied. But it contains one passage of special interest in this connexion. II, 13, a discussion of the definition of substances, uses the concept of topic (that of the genus; that of the accident) without referring to the treatise on the subject. The passage which thus strangely ignores the *Topics* is the one passage in either book of *An. Po.* which has been held to be referred to in the *Topics*. (See *supra* 1b and *infra* II.)

So far one might register a conclusion that *prima facie* the *Posterior Analytics* was a very early work, as early perhaps as any; but in each book there are some clear references to the *Prior Analytics*, and the first book contains two arguments (c 13 on *ὄν* and *διότι*, c 16 on ignorance) which imply familiarity with the three figures of the

¹ The subjects are—(1) true conclusion from false premises: 162a 10; (2) fallacy of begging the question: 162b 31.

² S.E. 168a 21. This definition also occurs (but without the words *τῶ ταῦτα εἶναι*) in *Top.* I, 1, 100a 25, S.E. 1, 165a 1, and is pre-

sumed (including those words) in *Rh.* I, 2 ('Analytics' section: see § IV below), 1356b 15. It is very probable that this is a stock definition of *συλλογισμός* much older than the developed doctrine of the syllogism.

syllogism. The interrelation of the two *Analytiks* forms therefore a problem to which no simple solution is adequate.

II. MAIER'S CONCLUSIONS.

Maier¹ regards a genetic account of Aristotle's logic as for his purposes unimportant. He also thinks that any certainty in the matter is unattainable. Nevertheless he does express fairly confident opinions as to the order of composition. He shares the general view that the *Topics* is an early work, and maintains (in definite opposition to some of his predecessors) that the whole of our *Topics* was completed before the theory of the syllogism was worked out. (Brandis had argued that the *Prior Analytics* was composed before the *S.E.*) His reason for this is that there are passages in *Top.* VIII and IX (those parts of the work which are regarded by others and by himself as latest in date) in which the moods and figures of the syllogism would have been helpful: they would surely have been used, he argues, as they are for instance in the *Posterior Analytics*, if they had been available. He compares the *Topics* also in this respect with the *Rhetoric*, which, he says, clearly presupposes the completed theory of inference. Thus the *Topics* must be older than the *Prior Analytics*; and since he is satisfied that the *Posterior Analytics* is of later composition than the *Prior Analytics*, it follows that the *Topics* precedes the *Posterior Analytics* also.

As to the *Analytiks* themselves Maier regards their present order as identical, apart from minor exceptions, with the order of writing. The *Posterior Analytics* is later than the *Prior Analytics* and *An. Po.* II than *An. Po.* I. He admits, however, that he cannot find any conclusive direct evidence for making the *Posterior Analytics* later than the *Topics*. But he sees a direct conflict between *Top.* VII, 3, in which the possibility of establishing a definition by reasoning is maintained, and *An. Po.* II, 6, where it is denied. This latter passage is, he says, clearly written with express reference to the *Topics* passage (92a 6 ff. ref. *Top.* VII, 3, 5; 92a 20 ref. *Top.* VII, 153a 26). Hence at least the second half of *An. Po.* II is later than *Top.* VII.

Of the *Topics* he says the oldest parts are Books II-VII, 2. These breathe Platonic air, in spite of the polemic against the Platonists. He calls attention to the use of *μετέχειν* in *Top.* IV, the general treatment of the Platonic forms, the almost complete absence of the terms *συλλογίζεσθαι*, *συλλογισμός*, etc. (The one passage in which *συλλογισμός* occurs is V, 2 130a 7; probably a later insertion.) In *Top.* VI *συλλογισμός* occurs repeatedly, but possibly not in its technical sense. In the second half of *Top.* VII its meaning becomes quite definite. This book is in short a reconsideration due to the discovery of the syllogism. Books I and VIII belong to this same time. *Top.* IX (*S.E.*) is still later, using the new term *ἐλεγχος*. Finally a *Gesamtredaktion* brings the parts all together under the formula provided in *Top.* I, 1.

It will be seen from this that Maier's assertion that the *Topics* is an earlier work than either of the *Analytiks* is to be taken with very considerable qualifications.

Maier's general account of the development of Aristotle's logical theory lays great emphasis on the background of sophistic and eristic, as a stimulus to a theory of scientific method, both in Plato and Aristotle, leading in Plato to the conception of *συναγωγή* and *διαίρεσις* employed in the articulation of the hierarchy of eternal forms, and in Aristotle eventually to the doctrine of the demonstrative syllogism. Both thinkers are represented as engaged in a struggle with a scepticism which threatened to capture not only the outer world but even the inner philosophic circles

¹ The following account has reference to Maier's standard work, *Die Syllogistik des Aristoteles* (Tübingen, 1896-1910). His general view

is stated in the *Vorwort* to the whole work; details in Vol. III, pp. 56 ff., 'Die Entdeckung des Syllogismus.'

THE COMPOSITION OF ARISTOTLE'S LOGICAL WORKS 117

professing allegiance to Socrates, e.g. the Megarian school. The development of scepticism in such circles seems to be the reason suggested to account for the fact that Aristotle bent his energies first to the task of devising an argumentative method for beating off such attacks and only later to that of finding a basis for philosophic or scientific certainty.

III. JAEGER'S SUGGESTIONS.

Jaeger does not anywhere treat of the logical works in any detail; but his general theory of Aristotle's development is so well worked out that any account of the logical works must reckon with it, either fitting into it or giving reason for its differences, and he does make a number of passing suggestions. Jaeger accepts the general view that logic was Aristotle's earliest preoccupation. In addition to the evidence of the Corpus he cites the fragments of the dialogue *Eudemus* as proving Aristotle's early logical bent. In those fragments the Platonic proofs of immortality are discussed in terms which suggest that Aristotle, while still metaphysically a complete Platonist, already possessed a pretty fully developed doctrine of categories. The soul is a substance and its immortality is conceived after the fashion of the *Phaedo*; but the logic of the Platonic argument is implicitly criticized and improved.

As to the relations between the several logical works Jaeger does not say much; but he implies a point of view similar to that of Maier. The Academy when Aristotle attended it was probably much occupied with discussions of scientific method: these discussions and the Platonic dialogues provided the stimulus to Aristotle's logical writings. These are taken to have begun with the *Topics*, which has been shown by Maier and many other scholars to be full of Academic echoes. The criticism of Platonic *διαίρεσις* in *Top.* VI is probably the product of controversy within the Academy. Thus Jaeger seems inclined to attribute the main bulk of the *Topics* to Aristotle's first or Academic period—the period of the dialogues. As to subsequent developments he gives no definite opinion. His emphasis, however, on the unmetaphysical character of Aristotle's logic, on the persistence with which Aristotle held to the conception of logic as a *δύναμις* or technique of thought, might be held to imply that attention to the metaphysical implications came relatively late, confirming the common view that the present order of the two *Analytics* is also the order of composition.

IV. SOLMSSEN'S BOOK.

Now comes Solmsen, a devoted pupil of Jaeger, determined to break new ground in this rather difficult field by the use of Jaeger's tools and method. I will describe briefly his general procedure and results. He begins by pointing out the unsuccessful conflation of two inconsistent accounts of enthymeme in a single passage of the *Rhetoric* (12). He finds corroboration of this inconsistency in three or four other passages in the second and third books of the *Rhetoric*. (Solmsen's analysis of these passages is a brilliant piece of work: his dissection of the *Rhetoric* must in the main stand, even if the inferences which he draws from it should be shown to be erroneous.) He then traces the two threads back into the logical writings, and by their aid constructs a picture of the early Aristotelian logic. Finally he seeks to show how this picture fits on to what is known of the Academy and of Aristotle's own development, thus giving it general historical confirmation. The results to which he comes are briefly these. In its first stage the Aristotelian logic was a dualism, consisting of (1) a general theory of argument, expounded in the *Topics*, (2) a theory of scientific demonstration expounded in the first book of the *Posterior Analytics*. The foundation provided in the first of these works by the *τόποι* is provided in the second by the scientific *ἀρχαί*. These two bodies of doctrine Solmsen calls 'Dialectic' and 'Apodeictic' respectively. In its last stage the Aristotelian logic

achieved unity by means of the developed theory of the syllogism expounded in the *Prior Analytics*. For convenience Solmsen refers to this last (with apologies) as 'Analytic.' Thus we have three elements, 'Dialectic,' 'Apodeictic,' 'Analytic,' the two first being mutually complementary. The 'Analytic' in a sense supersedes the 'Dialectic'; for it also presents a general theory of argument for any and every purpose. But the 'Dialectic' was nevertheless able to survive and maintain its place in the canon by a certain restriction of its claims. It had to be degraded from the status of a general logic to that of a special logic. In the field of Rhetoric we can see from the treatise which bears that name—and which certainly represents courses held by Aristotle in the Lyceum during the last period of his life—that the *τόποι* retained their place, in spite of the 'Analytic,' as principles determining the selection of premises (114). We can also infer from the frequent use of the *τόποι* in the *Nicomachean Ethics* and the *Physics* that Aristotle did not cease to believe in their dialectical fruitfulness. Here also the *τόποι* serve to determine the specific quality of the premises, and Solmsen suggests that the influence of the 'Analytic' is seen in this, that in these works Aristotle tends to confine himself to *τόποι* that conform to the syllogistic rules. Thus with the restriction of sphere the *Topics* becomes not so much a theory of argument—which is already provided exhaustively by the 'Analytic'—as an account of the principles on which arguments may be constructed where scientific foundations are lacking.¹

He does not go into great detail as to the character or date of the various parts even of these main works; but, summarized in a rough time-table, his arguments point to the following results:

1. *Top.* I-VII—begun probably in the Academy before Plato's death, together with the *Rhetoric*.
2. *An. Po.* I—the 'Apodeictic.'
3. *Top.* VIII and *S.E.* (The frequent mention of Koriskos in the latter points to the Assos period for this.)
4. *An. Po.* II—still in the 'Apodeictic' stage, but showing signs of increasing interest in physical problems.
5. *Prior Analytics*—the 'Analytic.'

As a good Jaegerian Solmsen is very anxious to bring this conjectured development into definite relation with Platonism; and much of his book—perhaps even half of it—is devoted mainly to this task. The roots of 'Apodeictic' he finds in the Platonic *dialeptics*. The linear chain of concepts postulated by the theory of demonstration is merely another view of that hierarchy of forms in which *διαίρεσις* is at home. The conception again of a *πρῶτος συλλογισμός* (*Rh.* I. 1357a 17) required by 'Apodeictic' is, he suggests, a characteristic expression of that *überwiegend normative Denkrichtung* (concentration on the standard or criterion) which marked Aristotle's early phases—so well exemplified, as Jaeger has shown, by the preoccupation of his early political thought with the *ἀρίστη πολιτεία*. The process of development, here as in the political field, is the gradual weakening of the emphasis without any definite reversal or explicit surrender of the normative aim. As Aristotle became more interested in the fields in which demonstration, as he had defined it, under the influence of the Platonic preoccupation with mathematics, was clearly not a practicable method, so he began inevitably to use the term more loosely and to moderate the stringency of his demands. In the Introduction to *Pol.* IV the orientation of the enquiry towards the ideal of government is not surrendered: in word at least this is

¹ One might perhaps put the matter thus. The *Topics* offered itself originally as an exhaustive list of forms of argument. A science was a field of discussion differentiated by its possession of certain material resources: its dis-

cussions could only select from these forms those which were most suitable. The later discovery was that all arguments derive from one fundamental form, which at once becomes the ideal of science.

still the question of questions; but other questions of more immediate urgency are allowed to intervene, and it soon appears that the centre of interest has shifted to them. So with Solmsen's 'Analytic.' It represents a stage in which the ideal of demonstration is weakening in its hold on Aristotle's interest because the problems which press upon him will not accept solution on strict demonstrative lines. The effect of this is that his logic of science becomes increasingly formal in character. One way of representing the development, as Solmsen conceives it, would be this. At one end of the chain is the Platonic 'form,' a frankly metaphysical notion; at the other end is the colourless 'term' of formal logic, an abstraction wholly indifferent to all varieties of content. Aristotle's development is from the one towards the other. Yet here, as elsewhere, he never breaks the threads that connect him with his Platonic starting-point. He never fully frees his logic from metaphysical presuppositions or sinks into mere empiricism.

Stated thus generally this conception of Aristotle's development seems to have two features which make it acceptable. First: I suppose we may take it as agreed that Aristotle started life as a loyal Platonist. Probably he took his full share in the criticisms of this and that doctrine which seems to have been a normal feature of the life of the Academy; but he accepted the Platonic foundations and built on them. Now a logic beginning from the *Topics* and flowering from that into the *Prior Analytics* does not seem a probable product of the Academy. One would expect a more metaphysical logic, i.e. a logic involving more definite assumptions as to the structure of reality. The problems raised in the *Posterior Analytics* are much nearer to those raised in the later Platonic dialogues than those of the *Prior Analytics*. Some writers are inclined to suggest that Aristotle may have taken refuge in less metaphysical enquiries because he was conscious of profound metaphysical divergences from his master which he hesitated to reveal. This is no doubt a possible explanation, but it is one rather difficult to sustain after an examination of the fragments of Aristotle's dialogues: for it seems that they by no means avoided metaphysical ground.

Secondly: the history of philosophy shows that there is a natural affinity between empiricism and logical formalism. From the time of Parmenides the identity of thought and things has been in one form or another a persistent strain with idealistic or anti-empiricist thinkers, while empiricists have insisted on separating and opposing them. No doubt it is true that the *Prior Analytics* represents no merely formal logic; but it is equally true that Aristotle never became a mere empiricist. The contention is only that he advanced more or less simultaneously in both directions. The next generation carried both empiricism and formal logic much further. On this side Solmsen's theory seems to me to have a high degree of general historical plausibility. And for these two reasons it is a theory which I should be very willing to accept if it will stand the test of detailed examination.

V. EVIDENCE FROM THE *RHETORIC*.

Aristotle himself described Rhetoric as the counterpart of Dialectic, and that he understood this statement quite literally is evident from his own treatise on Rhetoric. Now there is good reason to believe that Rhetoric formed part of Aristotle's stock in trade from the beginning to the end of his independent teaching career. If, then, Aristotle's conception of Dialectic went through such changes as Solmsen supposes, the traces of them should be seen in the *Rhetoric*: and this Solmsen claims to be the fact.

In *Rhet. A2* after the completion of an account of alleged rhetorical demonstrations, consisting mainly of *ἐνθύμημα* and its subdivisions, we are presented abruptly with a *μεγίστη διαφορά* of enthymemes, which is said to correspond with a division of

dialectical syllogisms. There are (1) those which belong to Rhetoric itself: these depend on the *τόποι* and may concern any of a large variety of subjects—ethics, physics, politics, etc. There are (2) those which belong to particular *τέχναι καὶ δυνάμεις* (arts or gifts): special enthymemes based on premises peculiar to a particular field—an ethical principle which has no application to physics or a physical principle which has no application to ethics. We are further told that most enthymemes in fact are of the special rather than the general order, and that the two kinds may be distinguished as those based on *τόποι* and those based on *εἶδη* respectively. (Instead of *εἶδη* you may say '*προτάσεις* proper to the *εἶδος* or *γένος*'—and as the word *πρότασις* is only used of this class you may substitute the word *προτάσεις* for the word *εἶδη*.)

According to Solmsen this passage represents the original treatment of the rhetorical *πίστεις* corresponding to Aristotle's early logic. In the *Rhetoric* as we have it this passage is enclosed in a framework derived from the later theory; but the structure of the relevant portion of the treatise (i.e. Books I and II) has a much closer relation to this earlier version than to the later framework, and direct inconsistencies between the two versions are by no means avoided.

In the other account of *πίστεις* (which precedes this) *ἐνθύμημα* and *παράδειγμα* are presented as a disjunction exhausting the field of rhetorical proof, just as *συλλογισμός* and *ἐπαγωγή* exhaust the field of dialectical argument. *Παράδειγμα* is dismissed briefly, but *ἐνθύμημα* is treated at length. It is described as a syllogism whose premises are *εἰκότα*, *σημεῖα*, or *τεκμήρια* (cf. 1359a 7)—an argument in most cases inconclusive, but achieving necessity in the case of the *τεκμήριον*. The detail is similar to that of the *Prior Analytics*, but more compressed. This is in fact one of the few passages in the *Rhetoric* in which the *Analytics* is referred to; but without the reference any reader would infer from a comparison of the two passages that this was written later. The analysis is entirely in terms of the syllogism; the general opposition is between necessity and contingency (or probability); and no use whatever is made of the *τόποι*. A precisely similar separation into two unrelated parts is revealed by an analysis of the brief account of the Refutation of Enthymemes in *Rh.* II 25. There we have, first, four modes of refutation based on the *Topics* and explicitly referring to that work (1402a 30-b 12); and, second (b 12-end), an account which starts from the four terms *εἰκός*, *παράδειγμα*, *τεκμήριον*, *σημεῖον*, discussing refutation in syllogistic terms and referring explicitly to the *Analytics*.¹ No attempt whatever is made to relate these two sections to one another, and in fact each seems to claim completeness.

Further confirmation is provided by the section of the second book (22-24) which enumerates true and false enthymemes in close dependence on the *Topics*. In the introduction (c 22) the distinction between special and general considerations made in the *μεγίστη διαφορά* of I, 2 is taken for granted (1396b 30), but the cardinal terms of the other analysis, *εἰκός*, *σημεῖον*, *τεκμήριον*, *παράδειγμα*, do not occur. Twenty-eight genuine enthymemes are enumerated in c. 23, all based on *τόποι*. The term *σημεῖον* occurs for the first time in the fourth of the spurious enthymemes of c. 24; and it appears from this section that two of the three 'signs' enumerated in the other part of A2 (called there refutable or fallible signs) are not to be counted as enthymemes at all. Further, the list of true enthymemes contains as No. 10 (1398a 31) the inductive argument (*ἐξ ἐπαγωγῆς*). This conflicts with the opposition between enthymeme (= syllogism) and example (= induction) fundamental to the *Analytics* sections of A2, but does not conflict with the *Topics* section, which makes no such opposition.

¹ It may be noted that of these four terms the only one which occurs in the *Topics* is *σημεῖον* (recognized as a rhetorical term in *S.E.* 167b 9).

Ἐνθύμημα occurs once, again as a term of Rhetoric (*Top.* VIII, 164a 6).

Some further corroboration is given by the two versions extant of the transition from *Rhet.* II to *Rhet.* III—one of which stands at the end of our II, the other at the beginning of our III. The second of these, which is the fuller, betrays its connexion with the *Topics* sections by its division of ἐνθυμήματα into εἶδη and τόποι: the first shows its connexion with the *Analytics* sections by its separate mention of παραδείγματα in correlation with γνῶμαι and ἐνθυμήματα.

Finally a small historical point: the emergence of terms like σημεῖον, τεκμήριον, παράδειγμα among the working rhetoricians of the fourth century is some explanation of their increased prominence in Aristotle's later rhetorical theory.

VI. EVIDENCE FROM THE TOPICS.

With regard to the *Topics*, it would be worth while to do what Solmsen does not do—scrutinize it in detail to see how far it is capable of sustaining the rôle of a general theory of inference which Solmsen assigns to it. But this task I cannot here attempt. I will pass over all general considerations, such as the evident influence of dialogue technique and the prevalence of Platonic terms. I will confine myself to commenting briefly on one or two passages to which Solmsen appeals in support of his hypothesis.

(1) *Top.* I, 100a 25-101a 17. Maier, as I have already mentioned, is inclined to regard *Top.* I as later than Books II-VI. Solmsen shows no such inclination. On the contrary he appeals to the introduction of the first book as directly confirming his hypothesis. He points out that this passage discriminates five kinds of 'syllogism'—demonstrative, dialectical, eristical, spurious (apparent), and the scientific paralogism. The last three are evidently not to be taken seriously as syllogisms; the eristical are the arguments examined in *S.E.*, the spurious are explicitly in this passage denied their right to the name, and the scientific paralogism is disqualified by its very name. There remain then only two, the dialectical and the demonstrative syllogisms, which are in fact identical with the τόποι and εἶδη enthymemes of the *Rhetoric* respectively. Give the *Topics* its complement in the 'Apodeictic' and the basis of these two types of argument is fully expounded—the latter consisting only of first figure syllogisms. In this passage, as also in *S.E.* c. 2, the apodeictic (*S.E.* 'didactic') syllogisms are differentiated as proceeding from ἀρχαί or πρῶτα, just as the special premises of the *Rhetoric* are.

(2) *S.E.* 184b 1. Solmsen further cites the well-known conclusion of the *S.E.*, often quoted as the assertion by Aristotle of a claim to be the author of the syllogism. He takes the passage in its natural sense as referring to the *Topics*, not to Aristotle's logical works generally, and observes that, so taken, it amounts to a claim that the *Topics* contains at least an important part of the doctrine of the syllogism. Now the retrospective summary given in that same passage shows that the work to which this is a postscript was in substance identical with our *Topics*. It follows that in Aristotle's view the exposition of the τόποι was equivalent to an exposition of the dialectical syllogism.

(3) *S.E.* c. 9. In this chapter Aristotle divides refutations into those that depend on the special principles of a particular science—which are indefinitely numerous as the sciences are—and those that depend on τὰ κοινὰ καὶ ὑπὸ μηδεμίαν τέχνην, which are the special province of dialectic. The nature of the distinction and the terms used are the same as in *Rhet.* I, 2, and the implication is once more that the τόποι are constitutive of the dialectical syllogism as the εἶδη and its ἀρχαί are of the scientific.

(4) *S.E.* c. 11. In concluding his account of sophistical refutation at the end of this chapter Aristotle says (172a 5) 'that it belongs to the dialectician to study these . . . is not difficult to see: ἡ γὰρ περὶ τὰς προτάσεις μέθοδος ἅπασαν ἔχει ταύτην

τὴν θεωρίαν.' (The Oxford translator has 'for the investigation of premises comprises the whole of this study.') What, asks Solmsen, can this mean? Neither Bonitz nor Waitz attempts an answer. From Solmsen's point of view there is only one possible meaning for the Greek phrase. The 'theory of premises' must be opposed to the 'theory of τόποι'; thus the reference must be to the scientific as opposed to the dialectical form of inference. If this is granted, the statement still remains difficult; for how should it be said that the Sophists should be met rather on the ground of the 'Apodeictic' than on that of the *Topics* ('Dialectic') when the *S.E.* is itself a part of the *Topics*? Briefly, Solmsen's answer to this question is that the *Prior Analytics* represents a development of the 'Apodeictic,' not of the 'Dialectic,' and that what we have in this passage is the early expression by Aristotle of a growing conviction that the answer to his problems was to be found in a development of the theory of the syllogism such as the *Prior Analytics* afterwards gave.

VII. EVIDENCE FROM THE *POSTERIOR ANALYTICS*.

On Solmsen's theory the *Posterior Analytics* (in the first instance *An. Po. I*) represents the complement of the 'Dialectic' of the *Topics*—the theory of scientific inference as proceeding in first figure syllogisms from its proper principles (πρώτα or οἰκείαι ἀρχαί) to demonstrated conclusions. The other figures had not yet been worked out, though Aristotle was perhaps aware of them as indirect proofs—a view of them which survived to determine the emphasis on reduction. On both sides of this early Aristotelian logic Platonic conceptions were fundamental. The Platonic hierarchy of forms and the Platonic method of διαίρεσις gave the 'Dialectic' its foundations in the theory of the Predicables: and the same order of ideas is at work in the theory of the successive subordination of form to form (term to term) in a chain of syllogisms on which the ideal of demonstration rests.

In his account of the 'Apodeictic' Solmsen lays great stress on its derivation from the example of mathematics. He discusses interestingly and at some length the development of the theory of mathematical method. Into this I do not propose to follow him. But it is mainly on the ground of the domination of mathematical ideas in *An. Po. I* and the intrusion in *An. Po. II* of other questions, from fields in which ἀπόδειξις could hardly be supposed to be at home, that he argues for the relative lateness of Book II. It should also be said, however, that Solmsen stresses the point that these books are composite in character, in the sense that both represent rather a series of discussions of points of interest than a systematic exposition of a defined field. Consequently they may well contain material of different dates; and the hypothesis that the bulk of the material is older than the *Prior Analytics* does not exclude the possibility of additions and modifications directed to accommodating the doctrine to that of the later work.

Solmsen's treatment of the 'Apodeictic' is naturally devoted chiefly to those elements in Aristotle's work which have direct Platonic connexions. He seeks to explain these in relation to their Platonic origin, and also, where possible, in relation to subsequent developments in the 'Analytic' and in later philosophic thought generally. I will review briefly a number of the topics which he thus treats.

1. In I, 33 the Platonic opposition of δόξα and ἐπιστήμη is discussed and accepted in terms very close to those of Plato. I put this passage first, though it is given no very important place by Solmsen, because Solmsen takes this opposition to be the basis of Aristotle's logical dualism of 'dialectic' and 'apodeictic'; and represents the 'apodeictic' generally as taking its rise from the discussion of the problems formulated in the middle section of the *Republic*. Solmsen uses this chapter as evidence of Aristotle's preoccupation, when he wrote this work, with those psychological (epistemological) questions which are also prominent in Plato's treatment, but pass from

view altogether in the 'Analytic.' With this he connects *An. Po.* II, 19, which belongs, he considers, substantially to the early period.

2. In I, 4 Aristotle defines certain terms cardinal to his theory of demonstration, especially the terms *κατὰ παντός*, *καθ' αὐτό*, and *καθόλου*. Solmsen argues that these, as here expounded, are 'offshoots and specializations' of the Platonic *εἶδος*, and suggests that the treatment of the 'Analytic' shows less Platonic echo, a decreasing ontological implication, and a consequent approximation to the empirical universal. In the 'Analytic' *ὅρος*, which occurs rarely in the 'Apodeictic,' becomes central, being appropriate by its freedom from ontological implications to the more formal logic of that work. The subsidiary term *πρῶτον*, also explained in I, 4, implies a definitive division of the area of the science after the model of the Platonic *διαίρεσις*.

3. The account of *ἀρχαί* in I, 10 offers Solmsen in a number of ways clear proof of its close dependence on Platonic thought. Plato had argued the imperfection of the mathematical method from the fact that it depended on *ὑπόθεσις* of which it was unable to give account. Solmsen regards *ἀρχή* as a term substituted by Aristotle for the Platonic *ὑπόθεσις*. He calls attention to the fact that the chapters which discuss *ἀρχαί* also discuss *ὑπόθεσις*; and seems to consider the intrusion of *ὑπόθεσις* as an irruption of Platonic terminology or a concession to the Platonic tradition. Now the Platonic *ὑπόθεσις*, as briefly described in the *Republic*, is an assumption of the existence of something (e.g. the kinds of angle, the odd and the even) which is to be dealt with by the science. There is no reference, e.g., to definition. Aristotle on the other hand carefully distinguishes between existential and definitory *ἀρχαί*, and the main interest is transferred with increasing emphasis to the latter. Solmsen argues that this logical development is the echo of a parallel development in the practice of contemporary mathematics.

4. With the question of scientific *ἀρχαί* is closely bound up the question, raised by implication in the opening of I, 2 and explicitly in I, 33, as to the independence or self-sufficiency of the sciences. The proposition that all syllogisms cannot have the same *ἀρχαί*, argued in this last chapter, represents perhaps the most far-reaching of all Aristotle's departures from Platonic orthodoxy. It confers on the sciences their autonomy and demands a complete revision of the conception of metaphysics. The basic conceptions of mathematics, so far from being unknown, as Plato had said, are better known than anything else; and philosophy has no responsibility in regard to them. There are common principles, but these are not premises from which the special principles can be deduced. The scientific *ἀρχαί* constitute an indefinitely large multiplicity, incapable of reduction to a smaller number owing to their heterogeneity, still more incapable of reduction to a single all-dominating principle. Solmsen seeks to place this controversy historically by incursions into the history of mathematical method as it developed under Platonic influence, but the passages of the *Republic* to which he so often refers are sufficient to guarantee its direct relevance to Platonic conceptions.

5. Solmsen calls attention also to the discussion of knowledge of the *ὅτι* and the *διότι* and their relation in I, 13. In this chapter the rejection of empirical science is in a sense as complete as Plato's in the *Republic*: science is demonstrative, and this consequence necessarily follows from that conception. But Aristotle's deductive theory of science allows him to recognize in mechanics a secondary or derivative science which, being based on principles borrowed from true sciences like geometry and stereometry, remains excluded from the cause and restricted to the knowledge of fact. The work of men like Archimedes was later to win for mechanics a higher place.

Much more might be said of Solmsen's treatment of the *Posterior Analytics*. His argument is always careful and sometimes subtle, and much of it is not easy to

summarize briefly. These specimens may, however, serve to show its general nature. His main aim throughout is, in his own words, to show 'the Platonic provenance of the apodeictic problems.' And he is satisfied that he has shown this. The 'Apodeictic' is the somewhat casual, fragmentary, unsystematic record of Academic controversies, united only by the dominance of the single central idea of demonstrative science; the 'Analytic' is the orderly record of the results of a single man's independent thought, consecutive, uncontroversial, sure of its ground, exhaustive. These characters alone suggest the relative lateness of the 'Analytic,' and a study of the detail of the treatise confirms this. The *καθόλου* of the 'Analytic' is not independent of its particulars as that of the 'Apodeictic' is: the *ἀρχή* of the 'Apodeictic,' representing the fundamental conceptions of science, has sunk in the 'Analytic' almost to the level of a mere premise (e.g. *An. Pr.*, II, 1). And though the *Prior Analytics* introduces itself as a treatise on demonstration, it actually includes in its scope every kind of syllogistic combination. These things make it easily intelligible that later thought, like that of Eudemus and Theophrastus, should develop rather from the 'Analytic' than from the 'Apodeictic,' but in the same degree they make it unintelligible that the 'Analytic' should have originated in the Academic period or in close temporal juxtaposition to it. In view of the use made of the three figures of the syllogism in certain parts of the *Posterior Analytics* Solmsen has of course further to assume that the 'Apodeictic' has at some date been worked over and accommodated to the later work. But with this reservation he concludes that the 'Apodeictic' goes back in substance to the Academic period, while the 'Analytic' probably belongs to the latest phases of Aristotle's thought—the period of his leadership of the Lyceum. I do not claim that this theory is proved—only that it has much to recommend it and that I can see no good reasons for opposing it.

J. L. STOCKS.

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SUMMARIES OF PERIODICALS.

LITERATURE AND GENERAL.

Mnemosyne LIX. 4. 1931.

J. van Ijzeren, *De Aeneidos Compositione*, observes that both Dionysius of Halicarnassus and Livy speak of Aeneas founding his city *before* his conflict with Turnus: Propertius speaks of Virgil 'qui nunc Aeneae Troiani suscitāt arma | iactaque Lavinii moenia litoribus.' But in our *Aeneid* there is no such city. V.'s epic however was first written in prose: van I. thinks that the prose sketch which the poet had shown to Propertius contained an account of the founding of the city: afterwards, when he proceeded to versify parts of the story, it slowly became obvious to him that he could find no room in his epic for such a narration. Hence we find some passages in which the first settlement appears as a city, others in which it is merely a camp. This was probably the inconsistency which made Virgil on his deathbed desirous to have the poem burnt. B. A. van Groningen, *De signis criticis in edendo adhibendis*, summarizes the proposals made by J. Bidez (Ghent) and A. Drachmann (Copenhagen) in their booklet 'Avant-projet d'une brochure traitant de l'emploi des signes critiques et de la rédaction de l'apparat critique dans les éditions savantes,' composed at the request of the Congress of Orientalists which met at Leyden in Sept., 1931. As v. G. remarks, of the twelve proposals the only one which will cause trouble to editors of literary texts is the suggestion that interpolations should be indicated no longer by [] but by { }. B. A. van Groningen, *Iterum de Cleomene Naucratica*, supplements his dissertation contained in *Mnemosyne* LIII (pp. 101-130) by referring to two passages in Pseudo-Arist. Oeconom. (1) p. 1352a 16-23 and (2) 1352b 14-19. He argues that the meaning of these passages can be restored on the supposition that some words have fallen out in the last clause of the second sentence of (1). He restores the clause thus: ὥστε συνέβαιεν αὐτῷ, εἰ μὴ <παρὰ τῶν νομαρχῶν ἴσους τοῖς φόροις, ἀλλ' ὅν σίτον> ἐξαγομένον ὀλιγοῦ πολὺ τέλος λαμβάνειν, αὐτοὺς τε πεπαισθαι τῆς προφάσεως. W. Vollgraff, *De titulo Argivo antiquissimo anno MCMXXVIII recuperato*, gives a minute account with commentary of C.I.G. 2 first discovered by Fourmont in 1729. W. Vollgraff, *De figura mensis Ianuarii e cod. Luxemburgensi deperdito exscripta*. In the so-called 'Fasti of 354 A.D.' January is figured as a man in a toga sacrificing incense: beside the *turibulum* stands a cock; in his left hand the sacrificer carries a small branch with three leaves; to his right stands a vessel. V. sees in this picture (reproduced) a reference to the Compitalia when sacrifices were offered to the Lares. These deities were originally the souls of the dead: the vessel contains the ashes of deceased kinsfolk, in honour of whom the incense is offered. The function of the cock is to put to flight the Larvae: the three-leaved bough is also apotropaic; the sacrificer is a *vicomagister* to whom Augustus conceded the right to wear the *toga praetexta*. V. thinks the calendar is in reality to be dated to the reign of Julian. H. Wagenvoort, *De Horatii epodo nono*, argues for the view that Maecenas and Horace were both present at Actium; that the 9th epode was originally two poems, the second having begun at V. 21, Io Triumphe! C. Brakman, *Varroniana*, writes notes on the *De Re Rustica* and *Menippeae Saturae*. C. Brakman, *De Iuturna et Dioscuris*. Accepting the view that the Etruscans came from Asia Minor and spoke a non-Indo-European language, B. holds that when in Asia they had in religion taken over certain features from the Greeks or pre-Greeks: among these was the cult of the Dioscuri, whom the Etruscans would have called Diutures, i.e. sons of Jove. From this came an adj. Diuturna (=Iuturna). The dea Iuturna is merely

the companion of the Dioscuri. Cf. the cult of the Laconian Πολυδουκεία. (There was no common term in Latin for Castor and Pollux, because marriage and parenthood were not predicable of the Latin gods. H. J. Rose, *De Actaeone Stesichoreo*, argues that when Pausanias (2. 9. 3) wrote Στησίχορος . . . ἔγραψεν ἐλάφον περιβαλεῖν δέρμα Ἀκταίωνι τὴν θεὸν (sc. Ἀρτεμιν), he meant by περιβαλεῖν δέρμα ἐλάφου changed him into a stag. The words of S. probably ran δέρμ' ἐλάφου περιβαλλεν. Cf. Aesch. *Agam.* 1145. There are short notes on the Roman altar found in Holland, and on the Calydonian inscription B.C.H. LIV. (1930) p. 43.

Rivista di Filologia. N.S. X. (1932) 2.

A. Rostagni, *I primordii dell' evoluzione poetica e spirituale di Virgilio*. IX. *La poesia del poemetto Ciris e i segni dell' anima virgiliana*. Admitting that the *Ciris* was inspired by Parthenius, the writer asks what characteristics it displays which are Vergilian. A detailed analysis of the poem shows how Vergil took hints from Apollonius, Theocritus and Catullus, but used them for a result which was his own. His outlook on life is now approaching that revealed in the *Eclogues*. A. Braun, *Gli 'eolismi' a Cirene e nella poesia dorica*. I. The presence of feminine participles with the termination -οῖσα in official texts at Cyrene raises afresh the problem of the origin of this form in Doric. In this instalment it is argued that, though it seems to show special connections with the periphery of the Doric area, the form is not a literary importation. P. Treves, *Ieronimo di Cardia e la politica di Demetrio Poliorcete*. De Sanctis was right in saying (*Rivista*, 1931, pp. 330 sqq.) that *P. Oxy.* 13 comes from the *History* of Hieronymus, but wrong in regarding it as an imaginative composition. It is an authentic despatch, written by Hieronymus himself while harmost in Boeotia, urging Demetrius to destroy Thebes after its second revolt in 292/1 B.C. This leads on to a discussion of Demetrius' policy, which makes him the link between Alexander and Antigonos Gonatas. M. A. Levi, *L'appellativo Imperator*. The author contests the doctrine of Mommsen, accepted in a recent article by A. Momigliano (*Bull. Comm. Arch. Com.*, 58), that 'imperator' was a word which could early be applied to individuals with no other meaning than that they held *imperium*. In fact its use is military, and from the first it seems to be assumed only after salutation by an army. G. Vinay, *Nota su Consul e Imperator*. The object is to disprove Momigliano's assertion that a consul was never described as 'imperator' before 90 B.C. On the assumption that Paullus was praetor at the time, *C.I.L.* II, 5041 (*I.L.S.* 15) is quoted as evidence for the application of the title 'imperator' to a magistrate in office. *Miscellanea*. I. G. De Sanctis, *L'epigramma festio di Rea*. On the interpretation of *G.D.I.* 5112, involving a demonstration that, in Crete, compound forms with the element ἐρ- followed by a consonant are in all known cases compounds of ἐκ. II. A. Momigliano, *Archigallus*. An addendum, suggested by J. Carcopino's *Attideia* (*Mélanges d'arch. et d'hist.*, 1923), to the writer's book *L'opera dell' imperatore Claudio*. M. agrees that Claudius inserted a festival of Attis in the Roman calendar; but, reading 'Archigallum' in Pliny, *N.H.* XXX, 70, denies that this office was created by Claudius. III. O. Tescari, *De Vergiliis Georgicon I*, 321. In ll. 320-1 read *ita turbine nigro | ferre hiemem*. *Recensioni*. *Note bibliografiche*. *Cronache e commenti*. *Publicazioni ricevute*.

Wiener Studien. XLIX. 1 and 2. 1931 (published in 1932).

J. Mesk, *Die Antigone des Euripides*. Does not think it possible to reconstruct the plot of this play from Hyginus 72. O. Danninger, *Über das εἰκός in den Reden des Thukydides*. D. thinks that Thucydides became acquainted with this device of Sicilian rhetoric after he had drafted his first four books and that it was introduced by him into the speeches when he revised the first draft, with the result that the argument is not always natural and successful. In the later books he employed it in the first draft of the speeches. K. Horna, *Zur Epikurischen Sprachsammlung*. Fresh

emendations and interpretations of the collection first published by Wotke in 1888 from Vaticanus 1850. E. Bürgi, *Ist die dem Hermogenes zugeschriebene Schrift περὶ μεθόδου δεινότητος echt?* II. In its present form it is not authentic, though it may contain elements that derive from Hermogenes. F. Porstner-Rösel, *Die Litotes bei Plautus, Terenz und Cicero*. M. Schuster, *Sachliche und sprachliche Bemerkungen zu Petrons Märchen*. Largely a criticism of E. T. Sage's edition of 1930. A. Kappelmacher, *Echte und unechte Predigten Augustins*. E. Fehrle, *Zur Bedeutung der lateinischen Vorsilbe re-*. Attempts to find other delicate meanings in the prefix beside its normal meaning of 'back' and 'again.' A. Biedl, *Nochmals zur Familiengeschichte der Memmier*. Corrects and supplements Münzer's article in Pauly-Wissowa.

MISZELLEN.—L. Radermacher argues that φλόξ ζῶσα in Eur. Bacch. 8 is more than a picturesque phrase. φλόξ belongs to a large group of monosyllabic root-words with uncanny connotation (e.g. Στίξ, νίξ) which were originally daemonic names. L. Bieler discusses the legend of Perseus in the X Pythian of Pindar. M. Pokrowsky holds that Euclio in the Greek original of Plautus' *Aulularia* was not a miser but merely a poor man rendered unhappy by finding a treasure. The passages in which he is represented as a skinflint are due to Plautus himself. E. Hauler contributes revised readings and interpretations of the fragments of Sallust's *Histories* in *cod. Aurel.* 192. C. Weyman continues his collection of imitations of Vergil's Eclogues found in later authors. K. Prinz supports Friedländer's view that Martial (*Cp.* II. 91 and III. 95. 5) was promised the *ius trium liberorum* by Titus but that it was actually conferred by Domitian. M. Schuster regards the archaistic element in Fronto's style as indicative of the second childhood of a dying language. E. Groag argues (1) that CIL. XI. 1525 refers to L. Venuleius Apronianus, consul in 123 A.D., and (2) that in an inscription from Thespiae (*Bull. de corr. hell.* 1926, 443, n. 81) Κονατέρνιον = Κ(όνιον) Ουατέρνιον. The statue to which the inscription refers was erected to the son of C. Vaternius Pollio. S. Brassloff in *CIL.* III. 387 = Diehl V. 1. 793 would read *secu(n)du(s) here(s)*. M. Runes defends the connection of *vito* with the particle *vi-* seen in *divido*, *viduus*, etc. Its original form is *vi-ito*, and its original meaning as seen in Plautus = *decedere*.

LANGUAGE.

Indogermanische Forschungen. XLVIII., 3-4. 1930.

J. Erdödi seeks to establish certain points of contact between the numeral system of I.Eu. and that of Ugro-Finnish. V. Pisani traces the change of Skt. *-ṣu-* into a later *-ṣṭh-*. F. Stürmer on βάλε (as the impv. aor. of βάλλω). H. Lamer discusses (ās Aegean or Mediterranean) certain words in *-ηνη*, *-νθ-*, *-σσ-*. H. Krahe on Illyrian consonant gemination before *-i-*; controverts Loewenthal's account of Πάμισος, and Vasmer's of Ἐριδάντας, as Illyrian. F. Stürmer: etymology of παιπαλόεις (: παιπάλη). V. Pisani seeks to interpret the Sicel inscription of Centorbi. A. Debrunner: σπείρα, lit. 'bundle' and hence = Manipulus. A. von Blumenthal offers interpretations of parts of *Tab. Iguv.* V. i, and of the *Carmen Arvale*. V. Pisani discusses the etymologies of Lat. *irrumare* and *testes*. F. Holthausen: etymologies of O.E., O.N., Gothic, etc., words (Germanic). W. Krogmann: on the etymology of Gothic *stafs*. E. Schwyzer traces survivals of the instrumental in mod. Germ. constructions with *mit*. A. Debrunner: ἐξέρων. Ö. Beke gives instances of temporal adverbs as nominatives. S. W. F. Margadant: on Latin *superstitio*. Reviews of books.

XLIX. 1. 1931.

E. Schwyzer: Avest. *asparəmə*: Byz. Gk. ἀσπρον, and other monetary terms in Gk. and Eastern tongues. A. Bretschneider: correction to *I.F.* xlviii. 181.

E. Hermann gives examples from Russian of the use of a patronymic in genitive instead of the grandfather's name (as in a well-known Aeol. insc.). V. Pisani discusses certain omissions of the *copula* in Slavonic. E. Fraenkel: (1) Lithuanian alternative expressions as substitutes for the comparative degree; (2) instrumental constructions in Baltic. Reviews.

XLIX. 2. 1931.

H. Frisk: Greek etymologies (κελέοντες, κίρα, κίραφος, ὀκλάζω). M. Pokrowsky: on semantic development in μύλαξ, μυλήφατος, and *machina*; with parallels from other languages. J. B. Hofmann: on the inflexion of *domus*. D. Detschew: instead of the alleged Thrac. gen. pl. θρακαλεζάν (!) read θρακ(ών) Ἀλεξάν(δρια). W. B. Schklowsky collects many examples of hybrid place-names in which Germ. and Romance elements of identical meaning are combined. T. Torbiörnsson discusses the Lithuanian change of *ai* to *ie* and its date with reference to Lith. case forms in *ais*. Id., loc. sg. of masc. *a*-stems in Lith. V. Pisani: on the ending (older *-si*) of the 3rd pers. fut. in Lith. W. Caland: addition to *I.F.* xlvi. 226 (Skt. *-ṣṇ-* becomes *-ṣṇ-*), examples from seventeenth and eighteenth century sources. Reviews.

Zeitschrift für vergleichende Sprachforschung. 60. Band. 3./4. Heft.

There is little in this number to interest those whose studies lie mainly in the two classical languages. F. Hartmann has a note on the expression *Λευκαῖς φρασί* used by Pindar (Pyth. 4, 109). E. Schwyzer contributes a short but interesting article on words meaning *awl* in various Indo-European languages with special reference to the Greek stem ὀπεατ-. L. Spitzer writes a short supplementary article upon the figure ὕστερον πρότερον as used by Homer, treated by H. Jacobsohn in a former number. Short notes are contributed by P. Maas upon the forms *δαίμονή*, *κτίδεος* and *προμήθεσσομαι*.

There is a long article by R. Loewe upon the history of various words, mostly the names of animals, borrowed by the modern European languages from indigenous American languages. H. V. Velten writes upon Indo-European tenses with special reference to their development in modern languages. J. Pokorny writes a note on causative forms in the original Indo-European. F. Specht has a further article on the history of pronominal inflexion, taking his examples specially from the Baltic languages. He continues also to treat of various points of interest in the inflexion of Lithuanian. G. Neckel comments upon F. Specht's article in the last number upon the form *Harigasti*. W. Wissmann has a note on the Germanic forms *sanpa-*, *sanþon*. E. Fraenkel continues his discussion of various phenomena in the Baltic languages, including particles. J. F. Lohmann sees an *u*-stem in Old Bulg. *vľadyka*. V. Pisani discusses Sanskrit verbal terminations in *-ram*, *-ran*, and concludes that the original point of departure was a third person plural in *-r*, identical with the middle and passive *-r* in Italic and Celtic. J. F. Lohmann in a short note upon Irish *buan* supplements some remarks of Specht's in a former number. B. Rosenkranz discusses shortly the history of the Hittite case-form in *-az*, which he regards as an ablative, not with Hrozný as an instrumental, comparing Greek adverbial forms in *-ως*. F. Karpf supplements remarks by E. Lerch in a former number upon the question of the influence of words of similar meaning upon each other's vowel sounds. He cites certain English words of irregular phonetic development.

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